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THE

RETROSPECT OF MEDICINE:

BEING

A HALF-YEARLY JOURNAL,

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

EDITED BY

W. BRAITHWAITE,

LECTURER ON OBSTETRIC MEDICINE AT THE LEEDS SCHOOL OF MEDICINE, ETC.

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A SYNOPSIS,

CONTAINING A SHORT ABSTRACT OF THE MOST PRACTICAL ARTICLES IN THE FOLLOWING PAGES: SHOWING, AT A GLANCE, THE MOST IMPORTANT INDICATIONS OF TREATMENT PUBLISHED BY DIFFERENT WRITERS WITHIN THE LAST HALF-YEAR. (ARRANGED ALPHABETICALLY.)

AFFECTIONS OF THE SYSTEM GENERALLY.

DIPHTHERIA.—Dr. Bristowe entirely disapproves of the application to the diseased surface of strong caustics and escharotics, and prefers the employment in all cases, of mild detergent gargles, or of warm milk, and such like bland and soothing fluids. For the throat affection is merely a local manifestation of a constitutional disease, and rarely kills except by involving organs, such as the trachea, and deeper tissues of the neck, which are beyond the region of the influence of such agents. Moreover, if applied to the surface of a thick false membrane, they are not likely to be of any use, and the removal of this membrane, even if possible, would only be followed by increased inflammation, and reproduction of the membrane. (Dr. J. S. Bristowe, p. 7.)

The following plan of treatment was found very successful during a severe epidemic of this disease last year, at an asylum for orphans at Croydon. There were fifty cases with only one death. ℞. Solutionis chlorinii ℥ss; syrupi simplici ℥ss; aquæ destillatæ ad ℥vj. M. Fiat gargarisma sæpe utendum. ℞. Solutionis chlorinii gtt. iv; syrupi aurantii ℥j; aquæ destillatæ ad ℥ss. M. Fiat haustus 2ndâ quâque horâ sumendus. The dose was increased according to age. Calomel was given in doses of one grain and upwards, according to age. The diet, too, consisted of concentrated jellies, strong beef-tea, wine, &c. After the third day, quinine was added to the chlorine solution. The same mode of treatment was adopted in adult cases; except, that, instead of calomel, the hydr. c. cretâ was given. (Mr. G. Bottomley, p. 6.)

The plan I have invariably adopted, regardless of sex, age, or incubation of disease, has been to give an active emetic of antimonial wine, from half an ounce to an ounce, according to age; to freely cauterize the throat with solid nitrate of silver; to have a mustard poultice applied from ear to ear; the feet and legs plunged in a hot bath; and the patient confined to bed. After the emetic action has ceased, from three to five grains of calomel with five of compound extract of colocynth were given (or, for a child,

two grains of calomel with two grains of compound antimonial powder); and, four hours afterwards, the following mixture:—℞. Quinæ disulph. ℥ss; potassæ chloratis ℥j; acidi hydrochlorici diluti ℥ss; aquæ ℥viij. M. Fiat mist. cujus sumatur pars sexta 4tis horis. A gargle of chlorine solution must be frequently used to sponge out the fauces; it may be prepared by impregnating water as much as can be borne with the protoxide of chlorine. The diet should be at first farinaceous, and afterwards consist of strong broths and jellies. Sherry whey may be given alternately with quinine, which latter is of the greatest use, and must be given in large doses. (Mr. J. C. S. Jennings, p. 13.)

Having first freely cauterized the false membranes with lunar caustic, inject every hour against the fauces a solution of common salt, the strength of the solution being such as not to create nausea. The tincture of iodine will also be of use as a topical application. The author places great reliance on this treatment. (M. Roche, p. 12.)

It is of the greatest importance to arrest the local inflammation, and to that end nothing answers so well as painting the fauces over with a very strong solution of nitrate of silver, (15 grains to the drachm). Later in the treatment a weaker solution may be used, or Bretonneau's application, one part of hydrochloric acid to three of honey. But where the inflammation is more sthenic, inhalation of steam and soothing applications are desirable. Of all the medicines which present themselves for our choice, the tincture of the sesquichloride of iron is the one upon which I chiefly rely. (Mr. T. H. Smith, p. 16.)

Rheumatism, *Acute.*—The two chief indications in the treatment of rheumatic fever are, 1. To prevent the formation of an undue amount of lithic acid, or to favour its conversion into urea; 2. To facilitate the elimination of the fibrine present in excess in the blood, the true causative agent of the local affections peculiar to the disease. Now, alkalies not only act as solvents for lithic acid, but also dissolve fibrine. In addition to this, their neutral salts, especially those of potash, are diuretic. Alkalies, therefore, appear to unite more completely than any other known remedy all the properties requisite in the treatment of an uncomplicated attack of rheumatic fever. Lemon juice, though in some cases acting beautifully, is uncertain, and leaves the latter of the two indications unfulfilled. The same may be said of colchicum. (Dr. G. Whitley, p. 25.)

In many cases of rheumatism great relief will be obtained by the use of narcotic injections, to relieve the pains when severe. Of course the usual constitutional treatment must be employed. In one case a man could not move his arm after acute rheumatism, on account of pain in the shoulder. The pain was removed by a single injection. (Mr. C. Hunter, p. 375.)

SCARLATINA.—Chlorate of potash must not be given in scarlatina, with the idea that in chlorine something like a specific has been found for the disease—if so given it will fall into disrepute. It is a very valuable remedy for meeting particular indications in the treatment of disease, by arresting the ulcerative inflammation of the fauces, and by its arterialising properties, supporting the restorative powers of nature, when aided by other appropriate treatment. It may be combined with carbonate of ammonia, with the best effects. (Dr. Fountain, p. 396.)

SEQUELÆ OF MEASLES AND SCARLATINA.—M. Scoutetten, of Metz, has devised the following method to prevent the unfortunate sequelæ so frequently supervening after an attack of measles or scarlatina, as well as to prevent the necessity of confinement to the sick chamber for several weeks after convalescence. "As soon as convalescence commences, that is to say, when the skin is no longer red with the eruption, he rubs over the whole body, slightly warmed oil of sweet almonds or olive oil, and puts the patient in bed again, for two hours. The next day he gives him a tepid bath for an hour, then places him in bed, and if the skin is very dry, a new friction with the oil is made. These two frictions and one bath are usually enough to remove all danger. Still, in severe cases, it is well, to avoid any risk, to repeat the means indicated from time to time, until the skin regains its suppleness. These precautions taken, convalescents may be permitted to go out without fear of bad results." (p. 24.)

AFFECTIONS OF THE NERVOUS SYSTEM.

COMA.—Applied externally to the chest and limbs, and gently rubbed in, the external application of mucuna pruriens may be of use in comatose states from chloroform, narcotics, or other causes. (Mr. J. Rhodes, p. 379.)

CEREBRAL EXCITEMENT—MANIA.—In cases of violent cerebral excitement, delirium tremens, and mania, everything points to the necessity of some sure, speedy, and active mode of allaying excitement and procuring sleep—yet the stomach is often highly irritable, or in such a state that it will not absorb medicines, or the patient even refuses to swallow at all. Of all cases, perhaps this is the one in which the value of the hypodermic injection of morphia is most clearly seen. Inject one-third to half a grain of acetate of morphia beneath the subcutaneous cellular tissue of any part of the body, and in a few minutes sleep will be procured. (Mr. C. Hunter, p. 371.)

HYPODERMIC INJECTION.—In inserting the point of the syringe, the part must first be rendered tense, and then, if the movement be *quick and steady*, little or no pain is caused. The tissue injected is

TETANUS—POISONING BY STRYCHNIA.—Wourali poison is a direct sedative to the muscular system, causing complete relaxation of fibre. It is a direct antidote to strychnine. It does not appear to have been used in poisoning cases in the human subject, but Dr. Harley has succeeded in saving the lives of animals to which strychnine had been administered in poisonous doses. M. Vella, of Turin, has successfully used woorara in cases of tetanus at the French Military Hospital during the late war. In one case, which proved successful, two grains of woorara were dissolved in nine drachms of water, and compresses moistened with the solution were applied to the wound, the strength being gradually increased to fifteen grains in fourteen drachms of water, and the compresses renewed every third or fifth hour. This mode of treatment requires and deserves extensive trial, (M. Vella, Dr. G. Harley, p. 37.)

AFFECTIONS OF THE CIRCULATORY SYSTEM.

BLEEDING PILES.—One of the simplest and surest means for temporarily checking this kind of hemorrhage, is the application of perchloride of iron dissolved in glycerine, and applied on a piece of lint. (Prof. Simpson, *Med. Times and Gazette, Jan.* 22, 1859, *p.* 79.)

HEART DISEASE.—Most cases of disease of the organs of circulation admit of division into two great classes, with different symptoms and causes, and requiring different treatment; the whole depends on whether the disease is at one or the other side of that great barrier, the mitral valve. To the one class belong diseases of the aortic valves; to the other, mitral lesions and obstructive diseases of the lungs, especially old standing bronchitis with wheezing respiration. Now, when death occurs *immediately* in the former class it is by syncope, in the latter by apnœa; in the latter there is congestion of all parts behind the mitral valve, the lungs, the liver, and kidneys, are congested, respiration is difficult, there is an icteroid hue of the skin, the urine is scanty, and the engorged venous capillaries unload themselves, causing œdema of the cellular tissue of the lower part of the body. In the case of diseased aortic valves, however, this result is for a long time successfully opposed by the perfect closure of the mitral valve, after a time it may yield, and then the cases are practically the same; still it follows, that barring the risk of sudden syncope, the danger is much more remote in disease of the aortic, than in that of the mitral valves. As regards the principles of treatment, it will be found that in disease of the aortic valves, a tonic, and often stimulating place of treatment, is required in order to counteract the tendency to yielding of the ventricular wall. The sulphate of zinc, among medicinal agents, (which, however, must only constitute a small part

of our tonic plan of treatment), is very useful; but reliance may especially be placed on senega in these cases; it may be given along with hyoscyamus and nitric ether, and though an empirical remedy, the benefit derived from this medicine in palpitation from diseased aortic valves, is "invariably great." On the other hand, in the mitral class of cases, we must direct our efforts to unload the congested vessels. The portal system must be relieved by free cathartics, after which a free secretion of urine may often be established. Free secretion from the bronchial mucous membrane is also of much advantage. Digitalis, squill, and calomel, a grain of each in a pill, is a formula in very frequent use by Dr. Addison. (Dr. G. H. Barlow, p. 43.)

INTERNAL HEMORRHAGE.—The following styptic recommended by Dr. Warren of New York, will be found scarcely ever to fail in cases of hæmoptysis or uterine hemorrhages. Sulphuric acid ℥v., spt. turpentine, alcohol, āā ℥ij. Mix the turpentine slowly with the acid, add the alcohol and keep in a stoppered phial. The dose is 40 drops, and it may be given rubbed up with sugar. (p. 127.)

POPLITEAL ANEURISM.—An interesting case of popliteal aneurism successfully treated by flexion of the knee-joint, was brought before the Royal Medico-Chirurgical Society by Mr. Ernest Hart. The tumour was globular, of the size of a small apple, situated at the lower and outer part of the popliteal space; it had a full beat but was not very near the surface. It was found, on very complete flexion of the knee-joint, that the pulsation in the tumour nearly ceased. After a week's preliminary rest, the leg was bandaged from the foot to the knee, (not covering the tumour) the leg was thoroughly flexed upon the thigh and retained in that position by the application of a stout roller, very little pain was caused, and on the morning of the third day considerable solidification had occurred. On the fifth day the tumour was hard and solid, and neither pulsation nor thrill could be detected, and the case rapidly progressed to the most perfect recovery. (Mr. E. Hart, p. 118.)

Mr. Cusack, of Steevens' Hospital, Dublin, applies compression by means of conical weights, which, suspended to a frame arching over the limb, may be exactly applied to the artery; five and a half to seven and a half or eight pounds, are generally required to arrest the pulse of the femoral artery completely. At first the circulation must only be partially arrested, and the weight must be applied every alternate hour. After the lapse of six or eight days the weight may be increased till the circulation is completely arrested, the pressure not being continued, however, more than an hour and a half at a time. This mode of applying pressure appears the best hitherto suggested, as it approaches the nearest to manual pressure. It is easily applied, and has proved very satisfactory in its results. (Mr. S. A. Cusack, p. 410.)

STYPTIC.—*Solid Perchloride of Iron.*—The perchloride of iron is manufactured in a solid form by Messrs. Hopkins and Williams, of New Cavendish-street, in which state it is particularly manageable as a styptic. Another, and perhaps superior way of using it is to apply, by means of a spun-glass brush, a small quantity of the thick brown fluid, into which the solid perchloride kept in a bottle always deliquesces. It is particularly useful in such cases as excision of the tonsils, bleeding from the deeper-seated gums, &c. No inflammatory action follows the use of this drug. (Mr. J. Z. Lawrence, p. 398.)

WOUNDS OF THE PALMAR ARCH.—Compress the wound in the vessel by a firm roller, lay the fingers over this in a flexed position, and maintain them there, flex the hand on the forearm and the forearm on the upper arm, and render movement of the entire extremity impossible by the application of a roller from wrist to shoulder. The happiest results will follow this mode of treatment. (Mr. O. Pemberton, p. 122.)

Before having recourse to more serious measures, it is well to try the effect of flexion of the forearm upon the arm, placing a small pad of lint upon the wound, with very slight pressure. In country practice, where appliances are not at hand, this may be of much temporary, or even permanent use. (Mr. H. C. Johnson, p. 126.)

AFFECTIONS OF THE RESPIRATORY SYSTEM.

ACUTE PULMONARY DISEASES.—*Veratria* given in very minute doses, and frequently, (five millegrammes, .077 of a grain troy, six or seven times a-day) does not produce the usual vomiting, but nausea and the other depressing effects are present. It will be found of great use in acute pulmonary affections, but must be avoided where there is any disorganization of the lung. Its action varies rather in different individuals. It may be given in a pill, with a little opium. (M. Ghiglia and M. Aran, p. 57.)

ASTHMA.—There is a remarkable tendency to habitude in asthma: that is, the disease having once assumed a particular form or peculiarity, has a great tendency to retain this. From this fact we may deduce a practical rule of considerable importance. When the asthmatic is going on well, leave well alone; keep him as he is; do not try experiments with him. If, on the other hand, he is going on ill, if his case has got into a rut, give it a shake, make some change, *any* change, no matter whether the object is very definite, or the therapeutics very rational, in the hope that, by breaking the existing habit, the patient's condition may be improved. It is an hazardous thing to make any change in the surroundings of an asthmatic whose symptoms are quiescent. (Dr. Salter, *British Med. Jour., Aug.* 13, 1859.)

The remedial action of *strong coffee* in relieving an asthmatic paroxysm is well known—but there are two or three practical hints with regard to its administration worth bearing in mind. It cannot be given too strong, and an excessive bulk is thereby avoided which oppressively distends the stomach, and its effects are less rapid. It is best given without sugar or milk, and very hot. It should always be given on an empty stomach, as, if given after a meal, it retards digestion and thereby actually favours an attack. (Dr. Salter, *Edin. Med. Jour.*, *June* 1859, *p.* 1112.)

CROUP.—The advantage of repeated vomiting to aid in the detachment of the false membranes of croup is admitted by most physicians. Some use antimony, others prefer ipecacuanha, the action of which is less depressing. The sulphate of copper in addition to its emetic action possesses a very remarkable property of acting locally, and this peculiarity makes it superior to both tartar emetic and ipecacuanha. When a solution of this salt is employed, the secreting surfaces are so modified, that no more false membranes are formed, or if they are formed, they no longer present the plasticity which renders them so adherent to adjoining parts. The dose should be repeated frequently till vomiting is induced, and the solution tolerably concentrated. (Dr. Missoux, p. 55.)

FOREIGN BODIES IN TRACHEA.—*Tracheotomy.*—The opening required is large, in fact, sometimes as large as it can be made, if in a child of four or five years of age. There is no increase of danger or difficulty in making a large opening instead of a small one. It is little or no use employing forceps of any kind for the purpose of extracting the offending body, it is preferable to await the return of cough, which in the act of expiration, will inevitably carry the foreign body with the current of air through the larger and nearer orifice, in preference to the smaller and more remote one. (Mr. F. C. Skey, p. 366.)

PHTHISIS.—It is found that the administration of *ozonized oils* has a remarkable tendency to reduce the frequency of the pulse. It was administered to fourteen patients. In two no such effect was observed, but in the larger proportion of the remainder the effect was very considerable, in some cases to the amount of twenty beats. Oils may be ozonized by exposure for a considerable time to the direct rays of the sun, after previous saturation with oxygen gas. (Dr. T. Thompson, p. 392.)

M. Beau observes that it is extremely rare that a case of phthisis is found amongst workers in lead, and accordingly recommends a trial of this mineral in cases of threatened or actual phthisis. He administers from two to sixteen grains of carbonate each day in pill, suspending the use of it as soon as the patient appears to be sufficiently impregnated. The patient must be supported by nourishing food, wine, tonics, and causing him to observe all the rules of a rational hygiene. (M. Beau, p. 55.)

SYPHILITIC PNEUMONIA.—There is an inflammatory consolidation of the lung which owes its origin to the poison of syphilis. An interesting case is recorded, in which it was associated with a papular eruption, and enlargement of one of the testicles. The treatment consisted of blisterings all over the chest, five grain doses of iodide of potassium, and four grains mercury with chalk, and conium, twice a-week. Subsequently the iodide of mercury with chalk, were given, till the gums became tender. (Dr. O'Connor, p. 54.)

AFFECTIONS OF THE DIGESTIVE SYSTEM.

ASCARIDES.—Use a simple injection of water, containing five, ten, fifteen, or twenty drops of sulphuric ether, according to the age of the individual, and repeated more or less frequently as necessary. The author states that this agent has a double advantage. It destroys the larvæ and allays the spasmodic and nervous symptoms produced by the animals. (Dr. Compérat, p. 147.)

ASCITES FROM CHRONIC PERITONITIS.—This disease is especially liable to come on in young females. There is distinct fluctuation, emaciation, generally diarrhœa, and frequently hectic fever; in some cases tubercular disease of the lungs may be detected. In fact the relations of the affection are decidedly with the strumous diathesis, and the treatment must be accordingly. Cod-liver oil must be given internally, and must form a sort of basis for the treatment; at the same time syrup of iodide of iron may be advantageously administered, if there is no diarrhœa, and the iodide of mercury ointment rubbed over the abdomen. Keep your patients as much as possible in the open air, and administer a nourishing but unstimulating diet. If there is diarrhœa or abdominal pain, opiates with or without astringents must be given. In two cases out of 36 tapping was resorted to; in one it materially assisted the cure, in the other it gave no permanent relief. (Dr. Paley, p. 58.)

CONSTIPATION *in Children*.—The chief cause of constipation in nurselings is the insufficiency of sugar in the breast milk. Speedy and full relief may generally be given by ordering some sweet sugar-water to be taken every day, besides the breast. (Dr. Jacobi, p. 322.)

DEFECTIVE ASSIMILATION IN INFANTS.—This disease, which is the most frequent and fatal of all infantile disorders, is almost always the result of want of breast-milk, and the use of injudicious food. Fatty acids, and already artificially digested animal and occasionally vegetable substances, and especially breast-milk, must be supplied. It is a very good plan to mix human and cow's milk. Simple juice of meat is very useful. The remedies of use are phosphate of soda, producing an emulsion with fats, thus allowing of their assimilation; chloride of potassium to dissolve carbonate of lime; phosphate of lime, to enable the blood to take up more car-

bonic acid, and thus hold in solution more carbonate of lime; (these substances severally strengthening muscular and bony tissue.) Nitrate of silver and sulphate of copper are the best remedies for the diarrhœa. Wine is also required, even in large quantities. (Dr. Routh, p. 57.)

DYSPEPSIA.—*Saccharated Lime.*—The ordinary lime-water in use is far too weak a preparation to develope to advantage the therapeutic properties of lime. Now lime combines with sugar, forming a soluble saccharate of lime, the solution of which is sufficiently strong to act as a valuable tonic and antacid. For practical use, the following is the best mode of preparation: Slake 8 ounces of quick lime; rub up with it 5 ounces of white sugar; add 1 pint of water; stir for some time, till the hard stiff masses which the sugar and lime are liable to run into are as much as possible dissolved; then filter. The product should be perfectly clear, and of only a slightly yellowish tint. A solution made in this way will contain 18 grains of lime in every ounce by weight, and altogether about 106 grains of solid matter to the ounce. This may be given in doses of from 20 or 30 to 60 minims or more, in a glass of water, two or three times a day. This solution is a powerful antacid, and probably the best we have, since it is stronger and pleasanter than magnesia, and instead of weakening digestion like the alkalies, one of its most important uses is as a tonic of the alimentary system in cases of obstinate dyspepsia. As such, its action is much more powerful than that of the vegetable stomachic tonics. It is particularly serviceable in gouty constitutions. It is not in the least constipating like chalk, but affords a very valuable means of overcoming gradually that chronic constipation which is so frequent an accompaniment of dyspepsia. (Dr. J. Cleland, p. 393.)

FISSURE OF THE ANUS.—It is unnecessary to divide the entire sphincter, as several examples have lately occurred which have been effectually cured by the division of *a few* of the muscular fibres of the sphincter at the situation of the fissure. (Mr. H. Hancock, p. 136.)

FISTULA AND SINUS.—Many or most cases of fistula in ano and sinus from other causes may be cured by injection with a small quantity of a very strong solution of iodine, and this mode of treatment, though not superseding the use of the knife, should be tried before having recourse to the latter. The solutions used may be ℥ss., ℥i., or ℥ij. to the ounce of spirit of wine, with a little sulphuric ether as a quick solvent of the iodine, or if it is not wished to keep so large a quantity ready prepared, from gr. iiiss. to gr. xv. may be dissolved in ℥i. of sulphuric ether, just when a case requires the treatment. A very fine gold nozzle may be fitted to Dr. Alex. Wood's hypodermic injection syringe (Young, Prince's Street, Edinbro', will supply this), and you have everything complete. Supposing it to be a case of fistula in ano, you would proceed as follows: First clear out the

fistula by injecting with a little plain tepid water, then, having dilated the rectum with Weiss's female dilator, and inserted a little cotton wool into the rectum to absorb any superfluous injection and so preserve the rectal mucous membrane, insert the nozzle of the syringe previously charged with the stronger injection into the fistula a little way, and inject about 30 minims into the part. A suppository containing half a grain of morphia may then be introduced, and the operation is complete. The author describes it as an operation which in his hands has rarely failed. (Dr. T. Skinner, p. 137.)

Double Fistula in Ano.—Avoid multiple divisions through the sphincter ani, as there is no doubt but that if there are two or more divisions of the sphincter muscle, subsequent union does not admit of such an amount of control over its functions as when only one is made. In some cases, the skin between the two fistulæ may be divided, and then this common cavity connected with the gut by a single division of the sphincter. (Prof. Fergusson, p. 137.)

HERNIA, *Radical Cure of.*—Mr. Redfern Davies, of Birmingham, has operated on 40 cases (not including the more recent ones) with success in thirty-seven. He recommends as an improvement in Wütz̈er's instrument, that, by means of a screw, the blades be made to expand at the end towards the abdomen, so that the funnel-shaped canal may be accurately filled by a plug whose sides are inclined towards its own. The transverse diameter of the instrument is also made much greater than the antero-posterior (as recommended by Mr. Spencer Wells), whereby the ring is converted into a mere chink, thus affording additional security against descent of the gut. (Mr. R. Davies, p. 128.)

JAUNDICE.—The first principle to be borne steadily in mind in all cases, whatever their cause, is, to promote in every way the functions of those organs compensatory by which elimination of bile is effected, using warm and vapour baths, saline purgatives, and the various kinds of diuretics. In employing blisters, cantharides is inapplicable, from its action on the kidneys.

In jaundice from acute congestion of the liver, leeches, cupping, fomentations, &c., over the region of the liver, and saline purgatives to unload the engorged portal system, are the curative measures most likely to be followed by relief. When the congestion is primary, due to spirit drinking, and such as may go on to inflammation of the adhesive character, mercury pushed to slight specific action is indicated; but in cases of closure of the ducts, mercury can do no good, here we can only carry out the principle of elimination by other channels. (Dr. S. H. Ward, p. 72.)

PROLAPSUS ANI AND HEMORRHOIDS.—*The Ecraseur.*—The ecraseur is not so frequently used in these cases as it deserves. Two very interesting cases are related in which a speedy and safe cure

was effected, and that after the nitric acid plan had failed. (Mr. R. Davies, p. 134.)

STRICTURE OF THE RECTUM.—*New Instrument.*—A very ingenious and useful instrument for dilatation of strictures of the rectum will be found figured and described at p. 145. It is intended to to obviate the great difficulty experienced in the treatment of these cases, from the irritable anus and sphincter ani muscle being dilated as much as the rectum above. When introduced, the instrument is in very small compass, but when the stricture is reached, two parallel blades, situated quite at the upper end of the instrument, are made to expand by means of a screw in the handle. Thus the stricture is dilated, whilst the sphincter is not stretched in the least. Instruments on the same principle might be employed with advantage in strictures of other parts besides the rectum. (Mr. A. Todd, p. 144.)

ULCEROUS STOMATITIS.—During the Crimean war ulcerous stomatitis, amongst the young soldiers, assumed an 'endemo-epidemic' form. The most rapidly efficacious method of treatment was found to consist in the exhibition of chlorate of potash, preceded or not by an emetic. If, after some little time, no benefit followed this treatment, the dry chloride of lime was substituted for the chlorate of potash. In most instances, however, a speedy cure resulted from the use of the chlorate alone. (M. Bergeron, p. 59.)

AFFECTIONS OF THE BONES AND JOINTS, &c.

ACUTE PERIOSTITIS.—The chief difficulty in diagnosis lies in its great resemblance to acute rheumatism. In both there is high inflammatory fever, with swelling of the limb and great pain, increased by pressure; but the point of difference is here—that in periostitis little or no pain is caused by pressure, unless it be made over, or in the course of, the affected bone. The swelling is not limited to the larger joints, to the ankle or to the knee, but occupies a wider range, and is œdematous in character. The conclusion in favour of periostitis will be much strengthened if it be found that the attack of inflammation succeeded an injury. In the treatment, do not rely on local depletion, with calomel and opium; make an early and free incision down to the inflamed periosteum, not waiting even for evidence of matter, for the mischief is then done, the periosteum is already separated from the bone, and the bone will die. (Mr. T. B. Curling, p. 111.)

DISEASE OF THE TARSUS.—*Conservative Operations.*—Disease of the tarsus in the vast majority of cases commences in the bones, and affects the articulations secondarily. The following is an epitome of the resources of conservative surgery in disease of these parts. If the os calcis is the primary seat of disease, (and this bone is the most frequently affected of all,) a T-shaped incision having been made, gouge away the diseased osseous structures.

This may generally be done with success, for however extensively the cancellous structure of the bone is involved, provided an external sound shell exists, the removed bone in most cases will be replaced by fibroid tissue, which, in time, to a great extent ossifies. If the whole bone is involved, and the astragalus partially, the former must be entirely removed, and the latter gouged as far as necessary. Disease commencing in the astragalus rarely long continues confined to it, and it is the result of experience that gouging operations, even if performed early, are rarely of much benefit; excision ought, as a rule, to be practised in preference. If the ankle-joint and calcaneum have become implicated, in addition to removal of the astragalus, the diseased parts must be gouged from the under surface of the malleolar arch and upper surface of the calcaneum, and the two brought together. A strong and even movable foot will result. When the scaphoid or cruciform bones are primarily diseased, (the middle of the three cruciform is so most frequently) the great tarsal synovial membrane becomes implicated, and Chopart's operation may be required, though sometimes partial removal, and gouging similar in principle to the operations already mentioned, may suffice. The cuboid is seldom primarily diseased. Infants and very young children frequently recover from caries of the tarsal bones with abscess by proper constitutional and local treatment, so that operations on them should not be hastily performed. (Mr. J. Erichsen, p. 96.)

PAINFUL CICATRIX AFTER AMPUTATION.—This is not so much induced by the nerve or its bulb being implicated with the cicatrix, as by the adhesion and connexion of the cicatrix by firm, unyielding, cartilaginous structure to the periosteum or bone. Separate the cicatrix from the periosteum by a subcutaneous incision, and prevent reunion by from day to day moving the skin backwards and forwards. It is no use excising the cicatrix, in the end matters are only made worse. (Mr. H. Hancock, p. 112.)

PIROGOFF'S OPERATION.—In this operation, as performed by Pirogoff, the articular surface of the tibia is left untouched. Dr. Eben Watson, of Glasgow, considers that the unfortunate issue of some of Pirogoff's cases may be attributed to his following this plan of operating, and recommends a modification of the operation, by which the articular surface is removed—thus the inflammation is rendered simply adhesive, otherwise the cartilage must inflame and suppurate, and be partly absorbed, partly discharged, before osseous union can take place between the tibia and calcaneum. The mode of operating recommended by Dr. Watson, will be found detailed at p. 101.

RESECTION OF THE ANKLE-JOINT.—Syme's and Pirogoff's operations or modifications of them, are frequently performed in diseases of the ankle-joint, when, by resection of the joint the otherwise healthy foot might be saved. These former operations should

never be performed unless there is so large an amount of disease as to preclude all hope of preserving a good and useful foot. Mr. Hancock at the Charing Cross Hospital has now performed this operation four times, three times successfully, and once unsuccessfully owing to pulmonary affection. The success of the operation depends upon leaving the anterior and posterior tibial arteries intact, and not opening the sheaths of the tendons; the only parts cut through are, the skin, the external and internal lateral ligaments, and the bones. Neither the extensor nor flexor tendons, the anterior nor posterior tibial arteries are injured, consequently, there are no vessels to tie; when successful, the patients are able to walk and run about with scarcely any perceptible limp. (Mr. H. Hancock, p. 91.)

Suppuration of the Knee-Joint.—*Free Incision.*—When suppuration has taken place in the knee-joint, it is absolutely necessary that an incision should be made. You will commit a fatal error to leave a patient unrelieved of abscess in the interior of the joint, under the impression that you are likely to add to the mischief already existing by opening so large a joint as that of the knee. The incision must be free, and the cyst allowed by its inherent faculty of contraction to force out its own contents. It is desirable to leave the opening patent, and not to bring the edges of the wound together by strapping and bandaging, although this practice may sometimes succeed. (Mr. J. Adams, p. 107.)

Surgical Fever.—*Veratrum Viride.*—The veratrum viride has been very extensively used lately in America, and its effects are thus described by practitioners of that country: The administration of a concentrated tincture reduces the pulse and keeps it reduced with a certainty, and to a degree, which can be effected by no other drug. Dr. Barker and others have published cases where they have thus brought down the febrile pulse in a few hours, from 140 beats to 80, 60, or less in the minute, and kept it at will at this lower standard. It thus is a powerful arterial sedative; but it has this further important action, that it is a powerful depurant, stimulating the action of the skin, kidneys, and secretory functions generally. It thus may be substituted for colchicum in the treatment of acute gout and rheumatism; most probably it depends for its therapeutical effects upon the common principle of the genus, veratrin, if so, we may fulfil the same therapeutic indications with the species which is in all our European pharmacopeias, the veratrum album. (Dr. J. Y. Simpson, p. 115.)

AFFECTIONS OF THE URINARY ORGANS.

Albuminous Anasarca.—Tannin is useful in all cases where it is required to arrest hemorrhages, to give tone to the organism, or to

remedy morbid secretions. Tannin given in doses of ʒss. to ʒi per diem, will be found to cure anasarca or œdema developed passively and occurring simultaneously with albuminous urine; its curative action is soon manifested in return of appetite, more normal state of urine, &c. (Dr. P. Garnier, p. 84.)

CATHETERISM.—*Precaution.*—When the bladder is greatly distended do not draw off the whole of the urine at once, especially if in a debilitated person, for it has occasionally happened that a fatal syncope has occurred, or depression from which the patient has never rallied. After removing thirty or forty ounces, withdraw the remainder in the course of half an hour or an hour. (Mr. H. Thompson, p. 179.)

DIABETES.—Some interesting cases of diabetes are related. The following is the treatment pursued in the first case: ℞. Acid. sulph. dilut. ʒiij.; liq. gent. compos. ʒiiss. M. cap. coch. parv. ter die ex aquæ cyatho. ℞. Aloes barb., ext. saponis, ää gr. xxiv.; pulv. ipecac. gr. iv.; ext. nucis vom. gr. iij. M. et div. in pil. xij. cap. j. vel plures h. s. ut opus f. A diet of bran cake, meat, and a free use of vegetables was enjoined. Dr. Camplin's bran cake is composed of ground wheat, bran, eggs, butter, and milk. It contains scarcely any starch. "It at once checks the formation of sugar, and arrests the whole train of morbid actions." The formula for its preparation will be found detailed at p. 425, *Retrospect*, vol. xxxv. (Dr. J. M. Camplin, p. 80.)

DIURESIS.—The constant drain on the system deteriorates the health, so that this affection sometimes becomes very serious; frequently it ends in phthisis, or may first pass on to mellituria. Tonics, as iron and quinine, must be freely given, along with opium or Dover's powder, and the health maintained in every way possible. Belladonna may be given with advantage, in small doses, as in irritability of the bladder, with a view of controlling the irritability of the kidneys. (Dr. Willshire, p. 82.)

DIURETIC.—The "Erodium Cicutarium" or "Stork's-bill", an indigenous plant growing in sandy places near the sea side, possesses great diuretic properties, and may be advantageously employed in many cases of dropsy. The mode of preparation is to infuse an ounce of the dried plant (every part of it) in three pints of water, stewing it in an oven, until two pints remain. The dose for an adult is four or five fluid ounces three times a day; probably more may be needed in some cases. (Mr. I. Byerley, p. 379.)

HYDROCELE.—Mr. Pollard, at St. George's Hospital, adopts with success the treatment of hydrocele recommended by Dr. Simpson, (see last vol., p. 277) viz., the introduction of metallic wires through the sac, leaving them there for a few days; they completely drain it of fluid, and excite sufficient inflammation of an adhesive character to ensure the obliteration of the sac. (p. 187.)

IRRITABLE BLADDER.—An interesting case of irritable bladder is related which had existed nearly a year and a half, and, as usual, was chiefly noticeable in the night, two or three times the natural amount of urine being passed, pale and insipid, but otherwise normal. Many other remedies had been tried without benefit. Extract of belladonna was then given, at first in doses of the twelfth of a grain gradually increased to the third of a grain, and ultimately a grain and a half was given during the day. The specific symptoms were then quite established—there were nausea and dilated pupils. The irritability of the bladder was almost entirely subdued, and now, six months after, the patient remains perfectly free from any recurrence of her distressing complaint. The whole course of administration occupied rather more than six weeks. This is a disease which is chiefly met with amongst the upper classes of society, and seem to be in great measure dependent on luxurious and enervating habits. (Mr. H. Behrend, p. 184.)

LITHOTRITY.—Cases should be rejected if there be—1. Manifest disease of the kiddey. 2. The urethra so contracted as not to admit with facility a lithotrite of ample size. 3. The bladder so intolerant as to be incapable of retaining its urinous contents for three or four hours; and on the other hand, a bladder of low nervous susceptibility. 4. Much enlargement of the prostate gland. Moreover, in performing the operation, the following cautions should be observed: The quantity of water injected should not exceed four or five ounces. No attempt should be made to open the instrument till it has been pushed thoroughly home into the bladder. In the act of separating the blades, pass the lower blade downwards towards the bottom of the bladder that the upper blade may not be painfully pressed against the neck. The instrument should retain the mesial line throughout the entire operation, there being neither necessity for, nor advantage in, directing the instrument to the right or left. At the first operation do as little as possible, breaking the stone only once. No advantage is gained by an abstemious diet. (Mr. F. C. Skey, p. 150.)

Lithotrity and Removal of the Fragments at the Time.—A "favourite method" of Mr. Fergusson's for expediting the cure in cases of lithotrity is to remove, by means of a light instrument, as many of the fragments as can be got away, at the time of operation. The stone must be broken by a larger and stronger instrument. There is sometimes a little bleeding and difficulty at the meatus. Fragments too large to be voided spontaneously, may thus be removed. (Mr. W. Fergusson, p. 155.)

PENIS, *Amputation of the.*—To obviate the difficulty in keeping the urethra open after amputation of the penis, immediately after the operation introduce a director into the urethra, and by the aid of a bistoury slit up the urethra and skin covering it, up to the extent

of about two-thirds of an inch. Now place a single suture on each side of the slit, uniting the mucous membrane to the skin. Perfect patency is thus given to the orifice, which is of a long oval form; and after cicatrization is complete there remains a free opening into the urinary canal. The same plan may be adopted with equal success in the treatment of obstinate stricture at the glans penis. (Mr. T. P. Teale, p. 186)

RETENTION OF URINE.—Two interesting cases of retention of urine are related, in which the obstruction (probably stricture, aggravated by temporary spasm of the urethral muscles) was overcome by passing down to the part, and pressing against it for a short time, a small piece of potassa fusa inserted into the end of a wax bougie: the wax was well moulded over all but the extreme point of the caustic. A small gum elastic catheter without the stilette may be substituted for the bougie. In both cases the passage of a catheter had been found impracticable. (Mr. L. Parker, p. 156.)

STRICTURE OF THE URETHRA.—*Dilatation.*—Generally the improvement in the stream of urine is commensurate with the mechanical progress, yet occasionally cases occur in which there is an absence of improvement in the power of micturition, although dilatation has been carried on successfully. This may be owing to one of two causes. The bladder may expel the urine with its wonted power, but that fluid, coming in contact with the irritable portion of the canal, causes it to contract forcibly. Or it may be owing to loss of power in the bladder. The former requires for its cure *complete* dilatation of the urethra; the latter frequent emptying of the bladder artificially; and both, the greatest attention to the general health. In fact, the loss of power in the bladder is often but a a symptom of constitutional debility. (Mr. H. Smith, p. 181.)

Treatment by Caustics.—Of course, simple dilatation, in the great majority of cases, will succeed in giving satisfactory and permanent relief. If this fails, we have two resources, viz., the division of the stricture by some cutting instrument, or the application of caustic. External division is an operation justifiable only in the most urgent cases, and especially when anterior to the bulb should, whenever possible, be superseded by internal division. In intractable cases, as a general rule, the use of the potassa fusa will be attended with the most beneficial results, rendering it unnecessary to resort to the knife. The cases in which potassa fusa is most applicable, are—1. Strictures having a cartilaginous hardness, impermeable as well as permeable. 2. Strictures which bleed more or less freely on the introduction of the bougie. 3. Irritable strictures. If the stricture is impermeable, commence with a piece of caustic, the size of a pin's head, inserted into a hole in the point of a soft bougie, and prevented by a little lard from acting before it reaches the stricture. Press this gently against the stricture for a minute

or two, and then withdraw. If the stricture is permeable, pass the bougie several times slowly, backwards and forwards over the whole surface of the stricture. This must be repeated as necessary. For a long hard gristly stricture the quantity of the caustic must be increased. (Mr. R. Wade, p. 169.)

Internal Urethrotomy.—The treatment of strictures in which dilatation has been proved to be only a slight palliative, by internal division, is now but rarely practised. Yet, though by no means taking entirely the place of external division, it may with the greatest advantage be employed in a large number of cases in which incisions are required. It is a much simpler, easier, and less severe operation than external division. No instrument must be employed capable of making a deep incision, for, where a deep incision is required, external urethrotomy should be practised in preference. The cutting instrument used must be drawn from behind forwards, thus the incision is not jagged, as it would be if made during the passage of the instrument from before backwards. The limits of the stricture being first accurately defined, the whole of the contracted part must be divided. After division, the borders of the incision must be maintained apart by catheterism, and healing by first intention thus be prevented. Internal division is almost devoid of risk when anterior to the scrotum, and it is an almost invariable rule that the non-dilatability of strictures increases with their proximity to the external orifice of the urethra. Thus the indications for internal division and its freedom from danger happily coexist in relative proportions. (p. 157.)

The best instrument for ordinary use is that designed some fifteen years ago, by Civiale, of Paris. The shaft is almost equal in size to an ordinary No. 3, the bulb to No. 5. By means of the bulb the extent of the narrowing can be accurately told. When the instrument is used, the bulb having been passed about half-an-inch beyond the obstruction, the cutting side must be directed downwards, and directly in the middle line; the blade is made to project to the required extent, by means of an apparatus in the handle, which accurately controls it, and the instrument is firmly pressed on the floor of the urethra and slowly and steadily drawn outwards, about an inch or an inch and a-half, so as fairly to divide the obstructing portion. For smaller strictures than Civiale's instrument is applicable to, Mr. Thompson has invented a smaller instrument on essentially the same plan. Woodcuts of both will be found at pp. 164, 165. (Mr. H. Thompson, p. 163.)

AFFECTIONS OF THE SKIN, &c.

CARBUNCLE.—*Incisions.*—The great point to be observed in making incisions in anthrax or carbuncles, is to make them sufficiently deep to go through the inflamed skin and areolar tissue to the healthy

parts beneath. If properly done, the flaps made by a crucial incision will be quite loose when taken hold of by the forceps, and will curl up and leave a widely gaping wound. (Mr. M. H. Collis, p. 188.)

Contraction from Burns.—*Simple Extension.*—Mr. Holmes Coote, at St. Bartholomew's Hospital, recently tried simple extension, perseveringly carried out, in one of these cases. By suitable appliances, the head and chin were kept extended, with the effect of bringing back the lower lips and jaw to their natural position. The effect of extension is to cause absorption of the adventitious material present in the cicatrix, and thus permit the latter not only to become soft and extended, but permanently to remain so. (Mr. H. Coote, p. 115.)

Erysipelas.—*Pigmentum Album.*—Paint the part over pretty thickly with common white paint, going a little beyond the edge of the inflammation. "I have never yet met with a case of this nature where it has not done immense good." The light, shining skin soon becomes wrinkled and shrunken, and after repeating the application once or twice the inflammation very rarely extends. This same application may be used with advantage in other forms of cutaneous affection. (Mr. A. Freer, p. 187.)

Gangrenous Sores.—*Disinfecting Powder.*—Mix and rub together 100 parts of plaster of Paris and from 1 to 5 parts of coal tar; they form a grey powder with a bituminous odour. This powder may either be used as it is or made to cohere into a sort of ointment by olive oil, when it may be spread on lint and used as a dressing. It is found that this powder absorbs the pus and other morbid products engendered on the surface of sores, and moreover destroys all offensive odour. (MM. Corne and Demeaux, p. 190.)

Lupus Superficialis.—The treatment adopted at the Charing Cross Hospital, as exemplified in a case reported under Dr. Willshire's care, consists in the internal administration of arsenic, dulcamara, elm bark, and of cod-liver oil, the latter being likewise used as a local application. This treatment is described as having produced "a really wonderful effect." The redness is diminishing and slowly disappearing. By some, this form of lupus is considered essentially scrofulous. (Dr. Willshire, p. 191.)

Scabies.—*Glycerine Ointment.*—The ointment made according to the following formula, is recommended by M. Bourguignon as having been successful in his hands. One general friction, not preceded by soap ablutions, is sufficient. Yelks of two eggs; essence of lavender, lemon, and mint, of each seventy-five drops; essence of cloves and cinnamon, of each 120 drops; gum tragacanth, half a drachm; well pounded sulphur, twenty-six drachms; glycerine, thirty-two drachms. Total weight, nearly eleven ounces. Mix the essences with the yelks of egg, add the gum tragacanth, make a

good mucilage, and then add very gradually the glycerine and sulphur. Glycerine may also be advantageously substituted for axunge in the preparation of the well-known Helmerich ointment. A formula for its preparation will be found at p. 197.

SLOUGHING BEDSORES.—These do not depend entirely on pressure, for they often come on where there is no pressure. It can be ascertained by experiments on animals, that injury of the cord is followed by sloughing, in parts not exposed to pressure. The real cause is irritation of the cord; sloughing of this nature may be prevented, or if it have occurred, may be checked, sometimes with great rapidity by alternately applying hot and cold applications; apply sometimes eight or ten times a day morsels of ice to the parts threatened or affected, then apply a very hot poultice. Thus, a change in the circulation of a part, and consequently a change in its nutrition, is produced. (Dr. Brown-Séquard, p. 192.)

AFFECTIONS OF THE EYE AND EAR.

CANCEROUS ULCER NEAR THE INNER CANTHUS.—An irregular slowly-spreading cancerous ulcer close to the inner canthus of the eye was successfully extirpated by the sulphate of zinc paste, as recommended by Dr. Simpson. A few grains of the sulphate having been heated to drive off the water of crystallization, were powdered and made into a thick tenacious paste, by the aid of a little glycerine. A little of this was applied over the ulcer and its hard edges, and the whole covered with dry lint. The unhealthy surface and hard edges were destroyed, and the wound cicatrized. In these cases it is found by experience that extirpation by the knife does not answer, the scirrhous hardness and obstinate ulceration returning. (Dr. W. Mackenzie, p. 205.)

CORNEAL FISTULA.—A case lately occurred to Mr. Dixon at the Moorfields Ophthalmic Hospital, in which a minute corneal fistula occurred in the cicatrix, left after extraction of cataract. At first, cauterization with a probe coated with nitrate of silver was tried alone, but without success. Subsequently a counterpuncture was made at the lower part of the cornea, and the cauterization at the same time repeated. Whilst the cornea was thus flaccid, the old fistula completely and firmly healed. (Mr. Dixon, p. 202.)

GLAUCOMA.—The following operation proposed and performed by Mr. Hancock in a case of acute glaucoma possesses several advantages over Graefe's: Introduce a Beer's cataract knife at the junction between the cornea and the sclerotic, the blade being inclined downwards, the point proceeding inwards and backwards. The place of puncture is at the commencement, on the outer side, of the lower semi-circumference of the cornea. The point of the knife having traversed obliquely the layers of the cornea, must be pushed

backwards towards the interior of the globe, thus dividing the ciliary ligament in a portion of its extent. On the removal of the knife, a quantity of discoloured fluid will escape. The advantages are: that by the situation and oblique direction of the incision, a free drainage of the fluid is provided for. The iris is very slightly wounded. The pupil is preserved of its original size, and in its normal situation. The operation is very simple, and is performed remarkably quickly. (Mr. H. Hancock, p. 227.)

Iridectomy.—Graefe's operation of excision of a portion of iris in glaucoma is not so much employed as it ought to be. Many cases are allowed to drift into hopeless blindness, which by it might be restored to useful vision. The mode of performing the operation has been previously described. The immediate effect is to lessen the tension of the globe: the wound heals in a couple of days, during which the aqueous humour drains away, but when union is quite complete, and the integrity of the anterior chamber is restored, the globe still continues naturally soft. The most complete results are obtained in acute cases, where the improvement of sight is very rapid and striking, and the cessation of pain equally so, when the operation has been early performed. An ordinary Beer's extraction knife is a safer instrument for incising the cornea than the lance-shaped knife of Jaeger. The fact that removal of a portion of iris does lessen permanently the excessive tension of the globe, is undeniable, though the modus operandi is still unexplained. (Mr. J. W. Hulke, p. 222.)

NÆVUS OF THE EYELIDS.—The simplest plan of treating these is, by drawing a little floss silk through them, steeped in perchloride of iron. The following inflammation will be slight. If this fails, severer remedies may be resorted to. (p. 204.)

NEW OPHTHALMOSCOPE.—A new opthalmoscope, the invention of M. Graefe and his assistants, is now in use at the Ophthalmic Hospital, Moorfields. It is fitted with adjusting tubes, rests for the patient's head, &c. It is rather a cumbrous affair, and requires to be fixed to the table, or elsewhere, before use. The advantage of it is, that the proper focus having once been adjusted, a dozen observers may look through in succession, and all see exactly the same part of the retina without any trouble. Its cost as at present made is about five guineas. (M. Graefe, p. 230.)

NIGHT BLINDNESS IN SCURVY.—Night blindness in cases of scurvy on board ship or elsewhere is more frequent than is generally supposed. The affection appears simultaneously with scurvy, and disappears suddenly whenever a better diet is obtained, as fruit, fresh meat, and vegetables. It probably depends on an altered state of the retina, the scorbutic blood not nourishing, and blunting the nervous pulp. (Dr. A. Bryson, p. 219.)

OBSTRUCTED LACHRYMAL PASSAGES.—Mr. Hulme, at the Central London Ophthalmic Hospital generally treats these cases, when the nasal duct is the part obstructed, by gradual dilatation, by successive sizes of probes, made of virgin silver, that they may more readily bend. In the first place the canaliculus is slit up, not quite to the nasal sac however, and then the probes are introduced, a small one at first, which is bent over the edge of the lid and cut off. At the end of three or four days this may be removed, and a larger one introduced. (Mr. E. C. Hulme, p. 199.)

SCLEROTITIS AND IRITIS.—Give a quarter of a grain of hydrochlorate of morphia every third hour, fomenting the eye frequently with warm water—the majority of cases yield to this very simple treatment, especially those in which intense pain is a prominent symptom; but a certain number of cases remain, in which the old plan of treatment is the better to pursue. (Mr. J. Z. Lawrence, p. 221.)

SOFT CATARACT.—It is well known that when soft cataract is treated in the ordinary way, by being broken up with a view to solution, it is often dissolved very slowly, and not without ultimate injury to the visual powers of the eye. But by the operation of linear extraction, or, in other words, extraction through a small section, the pieces may be successfully removed at once. The incision of the cornea is made by means of a triangular-shaped knife, sharp at the point, keen on both edges, and about two and a half or three lines broad at the base. It should enter the cornea near its outer margin, and pass horizontally in front of the iris, until the whole length of the cutting edges has entered the anterior chamber; it is then withdrawn. The capsule must then be broken up, and the fragments brought into the anterior chamber. Most of these will come out with the gush of aqueous humour. Others may, if necessary, be removed by a small silver scoop; but there is no objection to a few small fragments being left; they will rapidly be absorbed on the resecretion of the aqueous humour. (Mr. B. Bell and Dr. P. Watson, p. 215.)

STRUMOUS CORNEITIS.—In children, what is called strumous corneitis, is in most cases the result of a congenital syphilitic taint, and the remedies directed against it should be chosen accordingly. Mercurials and iodides should be given, at the same time supporting the system by tonics and a liberal diet. The mild mercurial ointment should be rubbed in behind the ears every night at bedtime. Ptyalism must never be induced. If the intolerance of light be great, the occasional employment of blisters behind the ears may do good. (Mr. J. Hutchinson, p. 214.)

WEAK VISION IN THE AGED.—In the case of aged persons whose sight is becoming enfeebled, and requires the aid of convex glasses,

great advantage is derived, supposing no nervous lesion exists, from painting every evening the eyelids and brow with laudanum, and allowing this to remain all night. (Prof. Nascar, p. 228.)

MIDWIFERY, AND THE DISEASES OF WOMEN.

ACUTE PERITONITIS AFTER ABORTION.—*Chloroform.*—Chloroform when given in full doses, either by inhalation or swallowing, depresses and brings down the rate of the pulse from 90 or 80, to 70, 60, or less. This may be taken advantage of in some instances of disease, especially acute serous inflammations. Dr. Simpson relates a very interesting case of acute peritonitis after abortion: the pulse was weak and scarcely perceptible, ranging above 150, and there was little hope of the patient surviving. Chloroform was given to relieve the intense pain, when the pulse was found to sink down to 100, or less, and became stronger and steadier; and as long as the action of the chloroform continued, the pulse continued thus greatly lowered in rate, and improved in power. The patient was kept for sixty consecutive hours under its influence, and the great abdominal tenderness and tympanitis were then almost entirely reduced, the patient being in a much more satisfactory state. The pulse never rose again to any very high rate, and she recovered nicely. (Prof. Simpson, p. 116.)

CAOUTCHOUC AIR-BAGS.—At p. 318 will be found some illustrations of M. Gariel's ingenious application of caoutchouc air-bags. One bag may be used either as a pessary in displacement of the uterus, as a plug in uterine hemorrhage, or as a dilator of the os uteri. On the same principle M. Gariel treats strictures of of the urethra, œsophagus, cervix uteri, &c., and similarly the nasal fossæ might be plugged in epistaxis. In all cases the bags are introduced collapsed, and when introduced are inflated either by a bag insufflator or syringe. (p. 318.)

DEFECTIVE LACTATION.—*Dietetic Treatment.*—Experience proves that much may be effected by proper diet; the food should be "analogous." First among the grains are lentil powder, or the so-called revalenta; but pea soup and bean soup have also a marked effect in improving the flow and richness of milk. The lentil and bean, however, are preferable to peas, when they are as easily procurable. Shell fish, as oysters, are peculiar in containing much phosphorus. If, on trial, they do not produce urticaria or roseola in the child, they will on the above account be advantageous, as the phosphates are beneficial to both mother and child. (Dr. C. H. F. Routh, p. 415.)

FIBROUS TUMOUR OF THE UTERUS.—In the case of fibrous tumour developed in the uterine stroma, the best treatment, if any treatment is necessary, is to cut down upon it, making a deep incision

through the mucous membrane of the uterine cavity, through any intervening tissue, down to the tumour. We thus allow the tumour to enucleate itself, and to transform itself into a fibrous polypus, permitting at some after period an easy removal. We moreover partially destroy the congeries of enlarged and congested vessels enveloping the tumour, and, knowing the marked tendency which these tumours have to degenerate when disturbed, we may hope that some subacute inflammation may take place, resulting in a suppurative disorganization. (Dr. A. K. Gardner, p. 280.)

Hemorrhage from Carcinoma Uteri.—In cauliflower excrescence of the uterus, the hemorrhage is occasionally most violent and alarming. Simply plugging the vagina does not suffice to check it, and the use of some powerful styptic means becomes necessary. Of these the simplest and surest is the perchloride of iron dissolved in glycerine. It may be applied by a sponge or piece of lint. Tannin also is very useful; it may be applied in the form of a medicated pessary; it rapidly coagulates the effused blood, and thus prevents the further flow. (Prof. Simpson, p. 315.)

Ovarian Tumour.—*Injection of Iodine.*—In most of the cases recorded in which iodine has been injected into ovarian cysts, some four, six, or eight ounces of the strong tincture have been used, and many of the subsequent ill effects were owing to the rapid absorption of so large a dose of alcohol. It is better to use an aqueous solution, sufficiently strong to cauterize the secreting lining membrane of the cyst. In a case successfully treated by the author, a scruple of iodine and half a drachm of iodide of potassium were dissolved in an ounce of water. The pain caused by this became very severe in the course of an hour and a half. Opium was given freely, and next day the pain had abated. Wine and quinine were administered for some weeks after the operation. (Mr. S. Wells, p. 299.)

Ovariotomy.—Never proceed to operate without first making an exploratory incision. Never operate in cases in which there is coexisting disease of some important organ. By thus selecting cases, the mortality after this operation will be materially lessened. It is remarkable that frequently the most successful cases are those in the most advanced stage of disease, whilst the most fatal are often in an early stage of development, and the general health comparatively little injured. In securing the peduncle, the ligatures formerly used are almost or quite superseded by the use of hare-lip pins or clamps, the suppuration within the abdominal cavity incident to the former being avoided by the use of the latter. It is probable, however, "that the écraseur may completely do away with the ligature and the clamp." Cotton wool is the most comfortable covering for the wound. Complete excision of the cyst is preferable to injection of iodine, which, although proved to be occasionally successful in those rare cases when the cyst is unilocular,

yet its effects even in these cases are uncertain, and sometimes deadly. (Mr. T. S. Wells, p. 289.)

If a proper clamp be carefully applied, as recommended by Mr. Hutchinson, no vessels require tying, and the sloughing pedicle is properly secured externally. During the operation two assistants should carefully cover the wound with warm wet flannels, so as to prevent the extrusion of the intestines, and especially the admission of air into the peritoneal cavity; the air in the room should be warm, not less than 66° to 70° Fah., and the same should be maintained for some days after the operation. Be careful lest the cut edges of the peritoneum be caught by the sutures or pins employed in bringing the edges of the wound together; the first suture should be applied close to the pedicle, and others at every half inch upwards. Opium and wine should be administered to the patient an hour before the operation, this is a point of great importance; if the pure opium of commerce made into pills direct from the mass be used, and given by the mouth, most patients will be able to take opium who would not otherwise bear it. Adhesions do not offer any objection to the operation, indeed, it is doubtful if the peritoneum is not so thoroughly altered from its normal character, as to be less prone to inflammation on this very account. Adhesions should be torn through, never cut. (Mr. I. B. Brown, p. 301.)

Pelvic Abscess.—The exploring needle is never used to more advantage than when employed for the exploration of pelvic abscesses, when they happen to be unusually difficult or doubtful in their diagnosis. The best exploring needle is a long slender thread-like trocar, with a wire stylet passing through it, and this instrument may with safety be passed into the most important organs, and the most malignant tumours. Inflammatory pelvic tumours feel fixed and immovable to a degree seen in the case of no other morbid growth, and more particularly when occurring in the broad ligament,—their most common seat—and lying close to the ilium, they feel so hard and adherent that they might almost be mistaken for an osseous tumour. (Prof. Simpson, p. 268.)

Phlegmasia Dolens.—In the treatment of this affection, which depends essentially on a toxæmic state of the blood; the first and most important indication of general treatment is, depuration of the blood by exciting the various organs of elimination to increased activity. by their appropriate stimulants. An emetic, or a mercurial purgative combined with ipecacuanha or antimony, may be given at first, but not so as to produce debilitating effects. Perhaps small and repeated doses of alkaline salts, are, as a general rule, the safest and most efficient remedies to fulfil this indication. Tonics and stimulants are rather required than any antiphlogistic measures, and of these iron and quinine are the best. The best

local treatment is, to wrap the limb up in cotton wool, and then encase the whole in oil silk, to prevent the escape of the insensible perspiration; the limb should be slightly raised in bed. Towards the end of the case a flannel bandage neatly applied from the toes upwards will greatly favour resorption. (Prof. Simpson, p. 259.)

PLACENTA PRÆVIA.—*Air Pessary.*—An interesting case is related by Mr. Jardine Murray, of Brighton, in which the os uteri being dilated sufficiently to admit two fingers, and syncope impending from the hemorrhage, a flattened caoutchouc air-pessary was introduced between the wall of the uterus and the presenting surface of the placenta. The pessary being then inflated by means of the attached syringe, it acted admirably as a direct plug and dilator of the os uteri. Whenever from time to time the trickling of blood recurred, it was effectually checked by further dilatation of the pessary, by a few strokes of the syringe. In two hours the os was sufficiently dilated to admit the hand, and though turning was necessary, as the shoulder presented, the case was soon brought to a favourable conclusion, (Mr. J. J. Murray, p. 255.)

PREGNANCY.—*Kiesteine in the Urine.*—If a little rennet be added to the urine of a pregnant woman, it considerably accelerates the deposition of kiesteine, and thus renders this more eligible as an aid to our diagnosis of doubtful pregnancy. If when the deposit is well formed we add to, say half an ounce of the turbid urine (taking the lower portion) a few drops of strong solution of ammonia, and boil for a minute or two, and we obtain a semi-mucous, almost tremulous mass, our opinion as to the presence of kiesteine is strengthened. By a mode of preparation described at p. 244, the juice of the rennet may be always kept ready at hand for use. (Dr. J. B. Hicks, p. 243.)

PREMATURE LABOUR. *Induction of.*—The following is the mode of procedure followed by Prof. Braun, of Vienna: Soften in hot water the end of a well-oiled catgut bougie, a foot long and from two to three lines thick, and pass it along the index finger with a twisting movement into the uterine cavity, until only a portion, equal to two fingers' breadth, remains in the vagina. The bougie so passed always excites pains in from six to twenty hours, does no injury to to the membranes, and is to be removed only just before the discharge of the waters, or the birth of the child. (Prof. Braun, p. 242.)

PRURIGO OF THE VULVA.—This may be relieved, and generally cured, by the assiduous and persevering application of a solution of borax, five or ten grains to the ounce of water, or in a little infusion of tobacco. An ointment of the iodide of lead, or of bismuth and morphia is very useful. Chloroform applied locally in the form of vapour, is one of the most certain means which can be employed.

MISCELLANEA.

ANÆSTHESIA.—*Rectified Sulphuric Ether.*—Rectified sulphuric ether should be used as an anæsthetic agent, "to the entire exclusion of chloroform." This opinion is founded on the safety of its administration. In no case has death been known to result from its employment, although in very extensive use in the hospitals of America. The effects of sulphuric ether pass off sooner, and less vomiting, nausea, and headache follow its administration. A bell-shaped sponge, with a concavity large enough to admit the nose and mouth, is all that is required in its administration. The greatest disadvantage is the large amount required, viz., from four to eight ounces, which is the average quantity—and anæsthesia is not so speedily induced as by chloroform. (Dr. G. Hayward, p. 405.)

MEDICATED VAPOURS.—*Local Employment of.*—Many diseases of the greatest importance, though perhaps constitutional in their commencement, and best treated by constitutional remedies, are in their termination strictly local, and no longer amenable to the class of remedies before employed. Such are cases of chronic bronchitis, chronic affections of the chordæ vocales, the eustachian tubes, and passages of the nose. In these cases local remedies are required, and are only not used on account of the great difficulty in getting at the parts; an impalpable powder of alum, gum, and morphia, may be inhaled or forced into or through these parts with considerable facility and much benefit. In one case of chronic bronchitis, the expectoration was reduced from a pint and a half to half a pint daily, with corresponding benefit to the patient. In many cases of this class much benefit is derived from the smoking of mercurial cigarettes, (a formula for which will be found at p. 409.) This principle may be further developed, probably with much success, in the treatment of hitherto intractable diseases. (Dr. J. B. Nevins, p. 407.)

SNAKE BITES.—A decoction or broth of the leaves near the root of the common male fern, polypodium filix mas, has been used as a secret remedy in Australia, as a specific for snake bites. Though the experiments hitherto made cannot be said to be satisfactory, it might be tried by medical men in the army, if nothing better is at hand. Probably a tincture would be more powerful. (Mr. Underwood, p. 370.)

SWOLLEN FINGER, *To Remove a Ring from.*—Wind a reel of cotton evenly round, beginning at the extremity of the finger, and bringing each coil into close apposition with the preceding, until the ring is reached; having then threaded a needle with the cotton, and passed it under the ring, carefully unwind the thread from the finger, the ring follows each coil as it is successively unrolled, and by almost imperceptible degrees is brought over the knuckle and removed. (Mr. E. Garraway, p. 414.)

PRACTICAL MEDICINE.

DISEASES AFFECTING THE SYSTEM GENERALLY.

ART. 1.—ON FEVER—THE DUALITY OF ITS SOURCE.

By Dr. WM. ADDISON, F.R.S., &c.

[Dr. Addison starts with the assumption that "fever is the expression of disorder in the corpuscles of the blood;" then, as these corpuscles derive the materials of their growth and nourishment from two sources, viz., the atmosphere and the plasma, the argument is continued that they may be disordered by injurious matter derived from these two sources. Thus we have two forms of fever, designated respectively contagious and hectic. Yet in common with other cellular bodies, the corpuscles of the blood possess considerable power of resistance to disease. It is not every passing impurity of the atmosphere, nor every injurious change of quality of the plasma, that establishes symptoms of fever. Hectic fever is produced by the effects of a local disease (as pulmonary suppuration, or suppuration owing to necrosis of bone,) on the plasma of the blood. To show that a local disease may and does produce changes in the blood plasma, an experiment is detailed in which agglutination of red corpuscles and formation of colourless matter, could be seen in the capillaries of a frog's foot, as the result of irritation—these altered blood elements passing into the circulation along the dilated veins. The author then continues:]

No one can doubt that the fluid of the blood is altered, and may be distempered, by unwholesomeness of diet, and by neglect of the daily excretions by the skin, bowels, and kidneys. It is also evident that these common sources of distemperature of the fluid of the blood must operate not only in persons in health, but also in persons who may be afflicted with chronic forms of inflammation, such as are present in necrosis of bone, in diseased joints, pulmonary consumption, &c. And if, in these last mentioned examples, distemperature of the fluid of the blood from errors in diet, or other such causes, concur with distemperature from absorption of spoiled matter from places of chronic suppuration, then there will be *deuteropathy of the plasma*, or disturbance of the qualities of the fluid of the blood from two points at the same time; namely, unwholesomeness of food and absorption of morbid matter. And it follows from the physiological relations subsisting between the corpuscles and the fluid of the blood, that an increasing

debasement of the qualities of the fluid *must* at length disorder the corpuscles.

But one of the chief points we have been arguing for, is the therapeutical relations of inflammation to the fluid of the blood. Suppuration is a means whereby injurious matter is eliminated from the plasma; and granulations and pus may perform the office of a depurating organ vicariously. Now we are saying that chronic suppuration and ulceration will occasion deuteropathy of the plasma, and thereby fever. This seems an incongruity. A little consideration, however, will show that it is only seeming incongruity. Diet sustains life and health only by measure; it is pathological in excess and by deficiency. Heat or temperature contributes to life and health only by measure. Oxygen, an essential constituent of the atmosphere, is an element of health and life only by measure; any great variation from a mean amount is pathogenetic. Too much or too little would equally occasion disturbance of health.

So likewise of the matters we are discussing: the process of repair in the commonest injuries has its pathological as well as its therapeutical aspects. The reaction upon which cure depends may be too much, or too little, or too long about. Granulations may be languid, or indolent, or deficient; or they may luxuriate, and usurp the place of fibrous tissue when fibrous tissue is needed for reparation. And fibrous tissue may hold its ground when osseous tissue is demanded for cure. This is sometimes the case in fractured bones. In ordinary contusions, great swellings appear and disappear. In their appearance, matter from the plasma of the blood must have become stationary in the part. In their disappearance, this matter must have been absorbed again into the blood. There must be, therefore, in these cases, in some way or other, a ready passage for elements from the injured tissue into the fluid of the blood.

Analogously, inflammation, as a depurative reaction in distemperatures of the fluid of the blood, may be hindered and interfered with in various ways. There may be too much or too little of it; and certainly it is very often protracted by the persistence of the blood-distempering causes. If, then, there be a ready passage—to and fro, as it were—between the fluid of the blood and the common tissue, it is not difficult to perceive that interference and hindrances may interrupt, or even reverse, the action in this particular.

The ordinary process of repair, then, has a double aspect; and so, also, has inflammation. And our argument is, that protraction or chronicity in either of them introduces the liability to absorption of spoiled material, and that thus therapeutical reactions may operate retroversely and pathologically upon both parts of the blood; the fluid first, and then the corpuscles.

But, that we may give an outline of the argument as it relates to hectic fever, we take as examples necrosis of bone, gout, and scurvy; and, in contrast with these, scarlet fever.

Necrosis of bone produces inflammation. There are hindrances to the removal of the dead bone; therefore inflammation passes into protracted suppuration and ulceration. These gradually weaken the patient; they disable him from taking exercise; digestion is impaired; and the functions of the depurating organs are disturbed.

This is one source of distemperature of the plasma. Distemperature of the plasma aggravates the existing inflammation; but the antecedent—the dead bone—cannot, in the case we are contemplating, be removed. Therefore disorder must proceed, until at length, from the places of suppuration, morbid matter ebbs back into the circulation; and the plasma, thereby thoroughly disordered, reacts upon and disorders the corpuscles, and hectic fever, more or less, appears. Upon this interpretation of the sequence of events between dead bone and fever, to cure the fever the blood corpuscles must be relieved from their disorder; to relieve them, the qualities of the plasma must be improved; to amend the qualities of the plasma, the chronic suppuration must cease; and that chronic suppuration may cease, the dead bone must be taken away. We all know that the effectual removal of the dead bone will cure the fever.

Errors in diet by excess produce distemperature of the plasma. And if the depurating organs, or some of them, fail in removing the distemperature, inflammation arises. In gout, the patient is surrounded with every comfort. The error in diet is most probably one of excess; it can, therefore, be easily interdicted; the antecedent can be readily removed; and, by medicine, the depurating organs can be stimulated to a more active working. For these reasons, distemperature of the plasma is concluded to be simple; its qualities are disordered from manageable sources, which may be attacked and abolished before disorder is communicated to the corpuscles. Inflammation in gout is, therefore, acute, and without fever.

On the other hand, in scurvy, the errors in diet are those of deficiency or unwholesomeness, and are much more difficult to deal with, especially where persons are crowded together in unhealthy localities, or limited to camps or ships. The individuals are poor, or, from other circumstances, cannot command the necessaries of life. Therefore, forms of inflammation, which in the rich are simple and acute, are here (or in the poor) chronic, and pass on to suppuration and ulceration, as in the sailors before mentioned, whose bare legs and feet were bitten by mosquitoes; upon which example we observed that because the unwholesome diet and confinement could not be changed, therefore the bitten parts passed into chronic ulcers. And if, in persons thus situated, with forms of chronic ulceration from continued unwholesomeness of diet, or other privations, morbid matter should be continually ebbing back into the circulation from places of chronic ulceration, the elements of fever, from a double debasement of the plasma, would exist; and fever thus arising would obviously be different from fever arising through miasms in the air.

In scarlet fever, it is concluded, that disorder of the blood begins, not with the plasma, but in the corpuscles. The illness commences, not with forms of inflammation, but with symptoms of fever. There has been no error in diet: a miasmatous air has acted on the blood; a specific poison is generated; and the plasma is distempered posteriorly to disorder of the corpuscles. But (here as in small-pox) no natural depurating organ seems adapted for the removal of the poison of scarlet fever from the plasma; therefore inflammation arises—that is to say, reactions between the plasma and the common tissue. The forms, amount, and duration of inflammation in scarlet fever, indicate the amount and severity of the disorder of the blood. Without these reactions, the patient would die from a poison shut up in the blood; with them, in their severest forms, there is a battling for life. When a joint has been crushed, death would take place from mortification, were there no reaction; but, this established, the patient is saved from the first and most pressing danger, though afterwards he has to pass the ordeal of inflammation, abscess, suppuration, ulceration, and very probably hectic fever too, as best he can, or suffer amputation for a chance of life. In scarlet fever, to cure the inflammation, the plasma must be freed from poisonous matter; and no more must enter it. That no more may enter it, the corpuscles must cease to generate and excrete a poison. Now, from the course observed in normal cases of an exanthematous fever, we may probably conclude that the corpuscles pass through their disorder in from four to six or eight days. When their disorder has passed, no more poisonous matter is discharged from them into the plasma; and, no more poisonous matter mingling with the plasma, the inflammatory reactions and the natural depurating organs together succeed in restoring the plasma to its natural state; whereupon, the blood regaining its normal constitution, inflammation comes to an end, and the patient is cured. The pathological and therapeutical sequences are the same as in small-pox.

In the midst of these therapeutical actions and reactions for the depuration of the blood in fever, it would seem that a depurating organ is sometimes coerced, as it were, to an increased and incongruous working; matter not naturally found in the secretion of the organ appearing in it at the crisis of the fever. In the performance of this enforced duty—the elimination of poisonous matter from the plasma—the parenchymatous elements of the organ may be overtasked and injured. Thus, in scarlet fever, the poison in the blood sometimes occasions parenchymatous disease of the kidneys; and, in such cases, there is evidence also of inflammatory reactions in the common tissue of the organ. This complication may have the same reflex effect upon the blood as chronic ulcerations. Spoiled material from the overburthened kidneys may ebb back again into the circulation; and a new blood-distemper may be inaugurated from elements of urine

retained in the plasma. Such being the case, there would be present the antecedent of a second or reactionary fever; namely, deuteropathy of the plasma—that is to say, distemperature—from disease of the kidneys, superposed upon the remnant of the poison of scarlet fever. And it is in perfect accordance with the argument, that a secondary fever from disease of the kidneys should be more apt to appear as a consequent of the primary fever, where the inflammatory reactions in the skin are too slight or insufficient for the full and effectual discharge of the poison. But it is to be observed, that the second fever is not a relapse or reappearance of the first; it is another fever of different origin. The first fever was occasioned by an aërial miasm; the second is occasioned by a debasement of the plasma acting injuriously on the corpuscles of the blood.

Let us give a brief summary of the facts and of the arguments.

In necrosis of bone, the pathological series begins with dead bone. If this cannot be taken away, it ends with fever, from deuteropathy of the plasma disordering the corpuscles of the blood.

In pulmonary consumption, the pathological series begins with tubercles in the lung. There are hindrances and difficulties in their discharge: suppuration is made chronic; and the phenomena end with fever from deuteropathy of the plasma.

In scurvy, the series begins with unwholesomeness or deficiency in diet, or other privations which cannot be changed. Ulcerations arise; and the series may end with fever, from deuteropathy of the plasma.

In these examples—namely, hectic fevers—disorder of the blood-corpuscles is posterior to a debasement of the fluid in which they swim; and forms of inflammation, protracted for longer or shorter periods, precede the fever.

On the other hand, in the contagious primary fevers, the pathological series begins with disorder of the corpuscles. It ends with forms of inflammation; because distemperature of the fluid of the blood is, in these fevers, posterior to disorder of the corpuscles. Thus we interpret the relations of fever to inflammation, and of inflammation to fever, by the difference between the two parts of the blood. The facts are, that sometimes fever precedes inflammation, sometimes forms of inflammation precede fever; because sometimes (from aërial poisons) the corpuscles are disordered before the plasma; and sometimes (from unwholesome diet, privations, and chronic ulcerations) the plasma is disordered before the corpuscles. If you accept these interpretations, the whole subject of repair, inflammation, and fever, presents a coherency which is worthy of your attention. Thus:

Mechanical objects injure the common tissue; and the process of repair arises.

Errors in diet disorder the plasma; and inflammation appears.

Miasms in the air affect the corpuscles of blood; and primary fever is the result.

Both the process of repair and inflammation, from hindrances and difficulties, may pass into chronic or protracted forms of suppuration, ulceration, and discharges; whereupon, if spoiled material should enter the circulation, and, by reiteration or quantity, thoroughly debase the plasma, the corpuscles suffer, and fever appears; namely, reactionary, hectic, or a plasma fever.—*British Medical Journal, May* 28, 1859, *p.* 424.

2.—ON DIPHTHERIA.

By George Bottomley, Esq., Croydon.

[The opinion of the profession differs widely on this disease, some practitioners considering it a new disease, others holding that the materies morbi is identical with that of scarlatina.]

It appears to me that at the commencement of the attack there is but a slight congestion of the mucous membrane of the pharynx, accompanied with slight constitutional disturbance; but, in a few hours, the membrane puts on a livid appearance, and runs rapidly into the gangrenous state: and that the false membrane is a deposit of layers of lymph in the early stage of the disease, which soon loses its vitality, and acts as an extraneous body, thereby preventing the parts from performing their natural functions. Accompanying this change, great depression of the vital powers of the system takes place.

Now whence arises the rapid and fatal change in a few hours? Is it not from meteorological causes? for it is certain that locality has but little to do with it. It has been as severe in high and dry situations as in low and damp; in isolated dwellings, and in crowded cities; in clean and well drained places, and the reverse. Therefore, ought we not to look to the atmosphere as producing those rapid changes, acting upon the blood, occasioning the gangrenous condition of the throat, accompanied with an extremely low and depressing type of fever, from which the patient rapidly sinks into a state of extreme and fatal exhaustion? It therefore appears consistent with pathology to administer a most powerful antiseptic remedy, to act promptly both locally and constitutionally. After taking the above view of the disease named by Bretonneau *diphtherite*, I beg to submit to my medical brethren the plan of treatment which, I am happy to say, I have found very successful.

I had under my care several severe cases in the autumn of 1857, and again in the autumn of 1858. Those in 1857 occurred in the town and neighbourhood of Croydon, and those in 1858 in a new building, an asylum for the reception of children whose parents died young: consequently, their offspring were not constitutionally the best fitted to resist so formidable a disease.

The treatment I adopted in all the cases under my care was as follows—for *children*:—

℞. Solutionis chlorinii ℥ss ; syrupi simplici ℥ss ; aquæ destillatæ ad ℥vj. M. Fiat gargarisma sæpe utendum.

℞. Solutionis chlorinii gtt. iv ; syrupi aurantii ℥j ; aquæ destillatæ ad ℥ss. M. Fiat haustus 2ndâ quâque horâ sumendus.

The dose was increased according to age. Calomel was given in doses of one grain and upwards, according to age. The diet, too, consisted of concentrated jellies, strong beef-tea, wine, &c.

The same mode of treatment was adopted in adult cases ; except that, instead of calomel, I gave the hydrargyrum cum cretâ.

For many years I have ordered the chlorine solution in malignant scarlet fever accompanied with a diphtheritic state of the throat, with marked success. In the *Cyclopædia of Practical Medicine*, published in the year 1835, Dr. Tweedie states that, in an epidemic sore-throat which made its appearance in Tours in 1818, and to which Bretonneau gave the name of *diphtherite*, hydrochloric acid was found most efficacious.

The orphan asylum to which I have before alluded is a new building erected on the top of a hill, open to the south-west ; the rooms spacious and lofty ; every attention paid to ventilation. It stands alone, in a most healthy situation ; and the children, before admission, undergo a medical examination ; so that, at the time of admission, they are perfectly healthy, So that does away with the supposition of its being confined to ill-drained, low, and swampy situations, and densely populated, poor localities. In the months of July and August, 1858, there were fifty cases in the above asylum, of the most malignant form. They were all placed under the treatment before named. After the third day, quinine was added to the chlorine solution. Many were covered with the scarlet eruption ; eighteen had a severe form of measles ; and some few were free from eruption ; but all had the diphtheritic throat, and but one case out of the fifty proved fatal—a child four years old. The disease made its way through the various tissues of the throat and neck, and broke externally, giving vent to a most offensive discharge, the patient sinking from exhaustion, not being able to take sufficient stimulant and nourishment.—*Brit. Med. Journal, July* 16, 1859, *p.* 561.

3.—ON THE TREATMENT OF DIPHTHERIA.

By Dr. J. S. Bristowe, Southwark.

It may, I believe, be safely affirmed that we are unacquainted with any specific capable of arresting the course of diphtheria ; and, therefore, that our treatment, unless intended to be experimental, must, in the present state of our knowledge, be simply directed to the piloting of the patient in his progress through the disease, to the guarding him from any accidental perils, and in the event of such befalling him, to the repairing of their ill effects. The main danger in the

uncomplicated affection evidently arises from debility, and hence it has been properly insisted on by nearly all practitioners that stimulants are desirable. And, further, since that debility often manifests itself fatally only at a late period of the disorder, it is obvious that the use of stimulants alone, the action of which can merely be temporary, is not sufficient, and can only be regarded as subordinate to the exhibition of nourishment, the effects of which, if slower, are yet solid and permanent. It is highly probable, I think, that at an early period of the disease antiphlogistics, administered with discrimination, may be useful; but if so the period during which they alone should be employed speedily passes away; and on the whole it is manifestly safer to ignore that period, and to adopt from the beginning the stimulant and nutritive line of treatment, than to persist one moment longer than needful in the opposite course. Under these circumstances it seems to me most important that stimulants, combined with nourishment, should be commenced with early, and should be systematically persisted in. The amount of both, of course, must depend upon circumstances; but in order to insure a sufficiency they should be judiciously varied, administered in small doses, but at regular and frequent intervals, and if rejected by the stomach, then given in the form of enemata.

An important question is that having reference to the mode of treatment of the affection of the throat; and I may here at once state, as may have been inferred from the perusal of my cases, that I, for one, disapprove of the application to the diseased surface of strong caustics and escharotics, and should prefer the employment in all cases of mild detergent gargles, or of warm milk, and such-like bland and soothing fluids. The reasons which have led me to discard heroic applications are the following:—1st. That the throat affection is merely a local evidence of a constitutional disease, which is unlikely to be arrested in its progress by any treatment directed to its secondary manifestations only. 2nd. That the throat affection rarely kills, except by involving organs such as the trachea, and deeper tissues of the neck, which are beyond the region of the possible influence of such agents. 3rd. That even if the theoretical correctness of such treatment be admitted, the application of remedies to the surface of a thick false membrane, with the hope that they may affect the subjacent mucous tissue, is not only clumsy, but as regards the object intended, practically useless; and that the prior forcible removal of the membrane from the entire surface, in order to their efficient employment, is unjustifiable in the early stage, even if possible, and is likely only to be followed by increased inflammation, and reproduction of false membrane—by more real mischief, in fact, than the benefits presumably to be derived can possibly counterbalance. 4th. That the application of such agents around the diseased tract, for the sake of limiting, should such be the intention, the spread of the disease, must, even if its efficiency be allowed, be an exceedingly difficult, and generally impossible operation; and from the tendency which the membrane has to spread

from more than one centre, would probably, even if in the first instance thoroughly performed, become ultimately useless. Of course if a gangrenous state of the tonsils, or any other local complication supervenes, such topical applications as are commonly had recourse to in like conditions of the throat, should be employed ; and in all cases, even from the beginning, such treatment should be directed to the exterior, as we usually resort to for the sake of allaying inflammation or relieving pain.

As I have purposely refrained from going into details of treatment, even in regard to those two points which alone I have made the subject of remark hitherto, I have little to add in order to carry out the intentions with which I started. There are still, however, a few considerations to which I may refer. I am not disposed to place much reliance on medicinal treatment during the earlier period of the disease ; and, guided by general principles, should use such adjuncts only to the plan of practice sketched above as the condition or tendency of the case under observation might indicate ; yet, at the same time, should carefully watch my opportunity for commencing the employment of tonics. Opium will sometimes be needful, and so also purgatives ; but I should prefer the administration of the latter in the form of enemata. Lastly, any complications, renal, pulmonary, laryngeal, or whatever other they may be, need not, I imagine, any peculiar mode of treatment, but should be dealt with according to the principles which guide us commonly in our treatment of like affections arising under different circumstances ; or, to be more explicit, we should endeavour to cure or obviate by ordinary means any secondary lesion which may arise ; yet regulate our special efforts according to the general condition of the patient at the period of invasion of the superadded disease.—*Med. Times and Gaz., Sept.* 3, 1859, *p.* 228.

4.—*Treatment of Diphtheritic Sore Throat.* By C. Swaby Smith, Esq., Burbage, Wiltshire.—During the last three months I have had about forty cases of diphtheritic or malignant sore-throat under my care, and I have especially noticed that one and all of these cases have been in houses situated either near a pond or pool, or at the foot of a hill, and frequently where there are many trees about the house ; not one having occurred in houses situated on high ground. On inquiring into the history of these cases, I have had but one answer—namely, that the disease commenced by a sore-throat, which the patient thought was only a cold ; and consequently when I have seen them they have been in such a high state of inflammation and ulceration, that the patient has told me that he has then applied because he could not take food, either from the pain occasioned by swallowing, or else that it was no use trying, as it only returned by the nose ; and very often the voice has been almost inaudible. I have tried many modes of treatment, and so far with very good results ; but the one

that I have most faith in is one that I would advise those who have not used it at any rate just to give it a trial. On first seeing my patient, I apply the strong solution of chlorinated soda to the fauces, and then follow up my treatment by ordering a sinapism to the throat; a gargle, composed of solution of chlorinated soda, two ounces; tincture of myrrh, two drachms; water, to six ounces: to be used every half hour; and in cases where the children are too young to gargle, I order the throat to be frequently washed with the same mixture by a means of a piece of sponge. Internally I give to an adult (of course varying the dose according to my patient's age); chlorate of potash, two drachms; dilute nitric acid, three drachms; solution of cinchona (Battley's), one drachm; water, to six ounces; the sixth part to be taken every two hours. And in cases where there is much pain in the limbs, I generally add a few minims of tincture of colchicum, which addition has proved decidedly advantageous; the diet to consist of strong beef-tea, port wine, and, in short, all the nourishment the patient can take. I also strongly urge the necessity of free ventilation.

Out of these forty cases, I have lost only two, and both were in a moribund state when I first saw them. Although these means are undoubtedly useful in decided cases of malignant sore-throat, they are far too active to be resorted to in simple cases, as they would only tend to aggravate the symptoms.—*Lancet, Sept.* 10. 1859, *p.* 264.

5.—ON DIPHTHERIA.

By JAMES P. M'DONALD, Esq., Bristol.

[The writer commences by stating that he has had under his care a large number of serious cases of diphtheria.]

I consider diphtheria to be a disease produced by a specific poison taken into the system, acting through the blood, and *seen* at the throat. The following are the usual form and course of the disease in its severest type. The patient is *suddenly* (and generally in the morning) seized with violent vomiting of a thin, yellowish-white matter, of a very offensive character; then purging of a fluid of similar appearance and smell. These dejections last an hour or so, and are followed by great prostration and stupor. The patient lies for a period varying from six to sixteen hours in a heavy sleep, from which he is with difficulty aroused, and then only to sleep again. The skin is hot; pulse 100; the tongue is of a bright-red; drink is taken with avidity, if offered, but only to be immediately returned. And now the important question is put, "Is the throat sore?" The answer is *always* the same—"*Not in the least.*" This reply, to a physician inexperienced in the horrible malady, may be fatal to the patient. The diagnosis is that this is not a case of diphtheria. On the other hand, the experienced man *expects* this reply; he forthwith

carefully examines the throat, and then he *sees* the disease. In this early stage the tonsils, the soft palate, and the back of the pharynx present a bright shining red appearance. The small vessels are not seen individually injected, as in many forms of sore-throat, but the appearance is as though the parts had been brightly painted and then varnished. Hanging from the velum to the tongue is seen, in this stage, a transparent film of a tenacious fluid, which is burst by expiration, sending its particles over the mouth and the instrument used to depress the tongue. The next moment a similar curtain is formed. After a period varying from six to sixteen hours, the condition of the patient materially changes. The stupor has passed off, and delirium, often of a violent character, takes its place; there are the usual symptoms of cerebral excitement, and the fever runs high; breathing is quickened; the voice is changed to a thick yet shrill tone; there is a short, dry cough; (in children, evidences of coming croup); the neck is puffy and blushed; the tongue is coated with a white fur, and all those parts hitherto so brilliantly red are thickly spotted with a whitish substance, which, in a wonderfully short period, conglomerates, and forms one thick, plastic deposit, which in time may cover the whole palate to the teeth, so that the appearance, on opening the mouth, is as though it were lined with plaster-of-Paris. The violent delirium then subsides: the powers of life fail rapidly; the horrible sensations of choking and suffocation come on; the sufferer tears at his neck with his nails, and tries to open his mouth, yet full power of swallowing still continues, and he greedily gulps anything given him in the shape of drink; large livid spots form on the extremities, amounting sometimes to purpura; the diarrhœa of a white and offensive matter is incessant; muttering delirium comes on, and in a long tetanic convulsion death closes the scene.

This is a truthful picture, drawn from realities, of how a previously strong and healthy man may, *in six days or less*, cease to be.

Taking the above as a fair example of diphtheria in its most marked and deadly aspect, as I have seen it, we get the resemblance to it more or less in all minor cases. We must not expect to meet with all the symptoms in every case, but the condition of the throat is invariable. Whether that condition goes on to the second stage depends on the severity of the poison or the success of the treatment adopted. In all cases where there is either nausea or vomiting, followed by drowsiness, the throat ought to be examined, and if the redness and the "glassy curtain" appear, the immediate use of the proper appliances may, I am quite certain, save many valuable lives.

There has been considerable confusion with respect to scarlet fever and diphtheria. Some have contended for the identity of the two, maintaining that those cases in which no rash appeared were to be considered as "suppressed scarlet fever." To combat this view, it will be sufficient, I think, to draw attention to the great difference in the symptoms I

have described from those of scarlatina, and to state the fact of its having been my painful experience to have attended families some members of which have been swept off by scarlet fever *with diphtheria*, whilst other members, who had previously suffered from scarlet fever in a severe form, were now attacked with true diphtheria. That scarlatina invites diphtheria is very manifest, but that the diseases are perfectly distinct and different is equally certain.

Now as to the treatment. The constant attention to the condition of the throat should be our first care, the second is to resist the "tendency to death." By skilful personal application of strong solution of caustic to the glazed and reddened parts, the fungoid matter may not appear, or if formed, may be separated from the surface and brought away, and thus the horrors of the disease prevented. Still, even then, there is much to be done in supporting the powers of the constitutiou, so as to give it assistance in eliminating the terrible poison from the system.

Bearing these two essentials of treatment constantly in mind, I know of no epidemic disease we may be more hopeful about than this. Terrible as it is to behold—its very name spreading dismay and dread to all around, yet its severity and fearful characteristics seem to succumb to the judicious and speedy treatment of the attentive physician with a kindness hardly to be expected.

Diphtheria is no respecter of person, age, condition, rank, or temperament. Should it become more seriously epidemic than it has been, no doubt it will mow down many of those unhappy people whose hard necessities oblige them to live in the overcrowded and ill-ventilated courts and alleys of our large cities. In such cases it will clearly be the mission of our profession, as in visitation of cholera, to go *to* the disease, and not to let it *come* to us.—*Lancet, Aug.* 20, 1859, *p.* 183.

6.—*Diphtheria Treated by Irrigations with a Solution of Common Salt.*—M. Roche mentions in *L' Union Médicale* of July 26th, that by this treatment he saved his patients in six cases of diphtheria. The false membranes were first freely cauterized with the lunar caustic, and injections then made every hour against the fauces with a solution of common salt, the strength of the solution being such as not to create nausea. Chlorate of potash was also given internally; and tincture of iodine, as a topical application, was used in half the cases: but M. Roche considers that the irrigations with the solution of common salt were the chief agents in the cure. One little girl was not cauterized at all. The author likewise holds that solutions of alum, chlorate of potash, iodide of potassium, chloride of lime, &c., would perhaps be as efficacious.—*Lancet, Aug.* 20, 1859, *p.* 189.

7.—TREATMENT OF DIPHTHERIA.

By J. C. S. JENNINGS, Esq., Malmesbury.

At the first outbreak of the disease, no cases of scarlatina had appeared in the neighbourhood; nor were there any until the second outbreak, during the month of January in this year, when a few cases of diphtheria occurred; but scarlatina maligna ran through several families. In those cases, however, in which the rash was well developed, and not suppressed, there was little or no throat affection; and *vice versa;* and when the tonsils *were* affected, there was not the peculiar leathery exudation of diphtheria.

The plan I have invariably adopted, regardless of sex, age, or incubation of disease, has been to give an active emetic of antimonial wine, from half an ounce to an ounce, according to age; to freely cauterize the throat with solid nitrate of silver; to have a mustard poultice applied from ear to ear; the feet and legs plunged in a hot bath; and the patient confined to bed. After the emetic action has ceased, from three to five grains of calomel with five of compound extract of colocynth were given (or, for a child, two grains of calomel with two grains of compound antimonial powder); and, four hours afterwards, the following mixture:—

℞. Quinæ disulph. ʒss; potassæ chloratis ʒj; acidi hydrochlorici diluti ℥ss; aquæ ʒviij. M. Fiat mistura cujus sumatur pars sexta 4tis horis.

A gargle of chlorine solution was directed to be used frequently, prepared by impregnating water as much as can be borne with the protoxide of chlorine, generated from two parts of chlorate of potass, one of hydrochloric acid and one of water, and the fauces to be sponged out frequently with the same. The emetic I have rarely repeated more than once; but when the inflammatory stage has been severe, the fauces tense and shining, and the throat œdematous, spirit of nitrous ether and liquor of acetate of ammonia, or nitrate of potass, has been added to the mixture.

The diet has been at first farinaceous, and afterwards consisting of strong broths and jellies. Stimulants have been very rarely administered, and then only as sherry whey, alternately with the quinine, which I have trusted to as the sheet-anchor. For infants, quinine may be given in jelly, washed down with a mixture of tincture of sesquichloride of iron.

Upon this plan all my cases have been successfully treated, with the exception of one fatal case in a stout young man, where much valuable time had been allowed to elapse; the mushroom-like exudation having extended over the soft palate, completely blocking up the fauces and chink of the glottis: besides which, the emetic was not rightly administered, or failed to produce effect; neither was the purgative given as ordered; and the patient died from apnœa, suffocation being produced from spasm of the glottis when turning to lie down in bed.

Too much stress cannot be laid upon tartar emetic, quinine in large doses, and the avoidance or guarded use of alcoholic stimulants.—*Brit. Med. Journal, July* 16, 1859, *p.* 562.

8.—ON DIPHTHERIA.

By Thomas Heckstall Smith, Esq., St. Mary Cray, Kent.

There are three forms in which the disease presents itself, viz., simple ash-coloured diphtheria membrane in patches, with very slight congestion of the surrounding parts, and without fœtor. Secondly, a deeper colour, and more widely spread membranous exudation, with fœtid breath, and intense engorgement of dark hue. Thirdly, the membrane with much tonsillitis, in a few cases resulting in quinsy. But there has been a fourth and more formidable state of things to contend with, namely, an extension of the membrane in either of the above forms, to the larynx and trachea, the symptoms of which I need not describe. In the three cases of 1857, and in the earlier of this epidemic, there was no appearance of ulceration. If the membrane was peeled off, the part under presented a clean patch of smooth surface, distinguishable from the surrounding parts, but in no degree abraded. But lately, there has been more tonsillitis, and frequently superficial ulceration, in several cases in the last few weeks, excavating more deeply into the tonsil; the membrane being still distinctly marked. During this period, east winds have prevailed, and more feverish constitutional disturbances have been observed.

With reference to the more general symptoms. the prominent feature is depression of the vital powers. The pulse is not always quick, but when so, is that of an irritable circulation. More frequently the pulse is slow, waving, and very compressible; the skin readily cools down (as when a hand is exposed out of bed), is moist and soft, almost clammy to the feel. Where fever has been observed, it is of a remittent or intermittent type.

Some cases have been ushered in with slight diarrhœa, with discharge of blood. The nose, and sometimes the passage of the ears, become involved; and, in the former case, epistaxis has occurred, not readily arrested. In some cases, blebs of serum have arisen, especially on the fingers; and, in some cases, urticaria has come on as convalescence approached. Debility remains in a marked degree, even in milder cases, after the local symptoms have disappeared, and I know that fatal cases of syncope have occurred, even when convalescence was supposed to be advanced; but I have not seen this in my practice.

I have mentioned above that there have been several cases of pompholyx. In two of these cases. the first symptoms were those of diphtheria. The first was a very marked case, of which the following is a sketch:—

The daughter of a gentleman's gardener, residing in the garden, and

in a healthy situation, aged sixteen, had hitherto been healthy, had menstruated, and was employed in her father's house. I found the membrane formed over the tonsils, fauces, pharynx, and part of one cheek. The next day the nose was implicated, when violent epistaxis came on, which was with great difficulty arrested. Two days afterwards, the gums began to bleed; then she vomited blood. On the fifth day, pompholyx blotches appeared on different parts of the body, at first, filled with serum, but soon others appeared, filled with dark blood. These latter rapidly increased in number, so that the whole body, with exception of the face, became, so to speak, covered with them. There was hæmoptysis; blood was discharged with the stools, and the urine was albuminous. This case, after a very hard struggle between life and death, recovered.

The treatment, with the local treatment of diphtheria, to be hereafter described, consisted of bark, ammonia, vegetable acids, abundance of wine, beef-tea, &c.; but chiefly, gallic acid, in full doses. Lastly, the sesquichloride of iron, which seemed to have the most marked effect of any remedy. The recumbent position was most strictly enforced for a long time, as she could not move without evident danger of fatal syncope.

The other case of diphtheria combined with pompholyx, was that of a woman, aged sixty-four, never very strong, and not, perhaps, fully fed; but who had never had any previous illness. She resided in a healthy locality; but the cottage drain was offensive. When I visited her she consulted me for a large bleb on one leg, two inches by one inch and a half, oval, filled with grumous serum; on discharging which a slough formed, and a very ugly sore was the result. Just before this healed, another formed on the other leg, of about the same size, and on a similar spot. The urine was not albuminous. I observed, on my first visit, some thickness of the voice, and examined the throat, of which she did not complain. I found a membrane nearly covering one tonsil. She ultimately recovered; the principles that guided the treatment being the same as in the last case.

With reference to the urine in diphtheria, it is often very abundant, having the character of hysterical urine. I have not examined in all cases for albumen; when I have done so I have found it but in few. The lymphatic glands under the jaw, the small glands down the neck, and even the surrounding cellular tissue, are in some cases affected; but chiefly in strumous subjects. In one case, now under my care, extensive abscesses formed in the cellular tissue.

With regard to the localities in which diphtheria shows itself, it has not, in my experience, selected the malarious spots; but when it has done so the cases are more urgent. In many years practice in one locality those spots become known, and it happens that I have paid much attention to that subject in this locality. At each of its epidemic visits, cholera has selected those spots. As I have elsewhere observed, some years since, "Where fever had been, there came

cholera," but not so diphtheria. It has not altogether *avoided* those spots; but has not by any means *chosen* them.

At first, I was disposed to doubt if it was communicable; but I have evidence to satisfy me that it is contagious to a limited degree.

Have we seen this disease before? and what is its nature? In answer to the first question, I can say confidently that during a period of upwards of thirty years' practice I had seen no case of diphtheria until 1857. I had read Bretonneau's earlier papers, many years since, and should have recognised the disease had it presented itself. Of its nature it is less easy to speak. It is evidently, I think, a blood disease, and not merely a local one. But what is the nature of that abnormal condition has yet to be explained, or rather, I fear, has yet to be discovered.

In observing the progress of this epidemic, I have been instinctively led to reflect on the altered type of disease in general. I have myself no doubt of that alteration in the type of disease, observed since the year 1832, in England. From that date there has been a departure from the old sthenic type, and this has been more pronounced the last few years, until at length a genuine sthenic form of illness is almost, if not quite, unknown amongst us. We have instead, low types of inflammation, low forms of cutaneous diseases, low types of fever, having more and more a tendency to the remittent form; and a very marked increase, in localities where it was before almost unknown, and where no known local causes have arisen to occasion it, of intermittent fever. What was before a mere chill, a slight cold, thrown off with the first reaction, becomes now an attack of ague.

We have abundant evidence of this depression of vital power in the general symptoms of diphtheria. We have also a low type of local inflammation in unison with the general type; but why it should just now seize the throat as its local seat instead of showing itself as boils, carbuncles, whitlows, thecal abscess, necrosed bone, and in kindred forms, I do not know. But this I may venture to say, if I attack the malady with the local appliances, and the general treatment I should employ for erysipelas, the cases recover.

Treatment.—The principles that have guided my treatment of this disease, are: *first*, to arrest the local inflammation by exciting another of a different character; *second*, to employ elimination according to the individual case; *third*, in all cases to sustain vigorously the vital powers.

To accomplish the first indication, I prefer the employment of a strong solution of the nitrate of silver. Having first cleared the fauces, &c., as far as practicable by gentle means, I paint every affected part, and *beyond* it, with the solution, of the strength of fifteen grains to a drachm. In mild cases I have frequently tried one of milder strength, say five grains; but I am satisfied that in all

cases an efficient application of the full strength is the best. It is perfectly safe, and has at once a marked effect. It is more efficiently applied by a full-sized camel-hair pencil than a sponge. Severe cases must be seen again in twelve hours, and the application repeated should the so-called membrane spread. Later in the treatment, a weaker solution may be used, or Bretonneau's application, one part of hydrochloric acid to three of honey. And later still, when the membrane has disappeared, but much fulness and puffiness of the parts continue, a gargle, containing the sesquichloride of iron, or tannic acid. Where, as in my second case, there is much fœtor, the chlorate of potass is applicable. And where, as in my third case, there is more tonsillitis, we may, with advantage, employ inhalation of steam, or warm milk gargle. After the membrane is removed, and the tendency to diphtheritic deposit supposed to be arrested, the throat must be carefully watched; for until the endemic condition of the system is conquered, we may have a relapse of diphtheria.

I commence the treatment of almost every case with a purge, varying with the state of the tongue, pulse, &c.; but by far the most frequently, calomel and rhubarb, carefully avoiding salines. In some cases, with loaded tongue and suffused countenances, I have given, with the greatest advantage, emetics. Indeed, I am now so satisfied of their value, that I shall for the future, employ them more frequently, especially where the congestion is marked, or there is unusual tonsillitis. The further general treatment is of *great importance*, namely, that directed to sustain the vital powers and remove anæmia.

I need not dwell upon the necessity of wine, beef tea, &c. In the severe cases these are most urgently required, and must be liberally supplied. In the more trifling cases, if well marked, convalescence *will* be delayed, and danger of relapse continue, if these, or their equivalents, are not employed.

Of all the medicines that may present themselves for our choice, there is one far superior, in my experience, to all others; and upon which, I indeed, chiefly rely: tincture of sesquichloride of iron. I have tried others that were obvious; but none sustain the vital powers, steady the pulse, lessen its frequency, and give potency to it; none remove the soft clam of the skin, steady the action of the *kidney*, and remove the anæmic pallor of the face, as does this. My confidence in its employment, and also in the use of the nitrate of silver, is fortified by their effects in erysipelas, in which they are *almost* specific. Cases will occur in which this treatment must be deferred, or modified, as where the tonsillitis is severe. In those cases, with the appropriate local treatment, I have first used the decoction of cinchona. with liquor of acetate of ammonia, or the latter with ammonia; but we afterwards come to the steel.

Such is a brief outline, and time admits of no more, of the treatment of cases in which croup has not supervened. How are we to

meet this formidable extension of the disease? Shall we, in any cases, resort to tracheotomy? I think not. Success, in reported cases, has not justified it; and we cannot tell how far the membranous deposit has extended. I have had urgent cases of this description, and, happily, have hitherto treated them with success. My sheet-anchor is emetics, repeated, and very active ones, always of ipecacuan and sulphate of zinc, never of antimony.

Did time admit, I would detail these cases, but they present no peculiarity except the urgency of the symptoms. In one child, three years of age, I gave seven emetics before the symptoms were fully relieved. Portions of the membrane were detached and thrown off in the act of vomiting. I gave wine and ammonia in the intervals. In this case I gave also repeated small doses of calomel, because Bretonneau recommends it: and the case being of extreme urgency, I would not neglect one of such authority.

In the more severe cases of diphtheria, I cannot too impressively recommend strict horizontal position. I have seen more than one case in which fatal syncope was to be apprehended if this had been neglected.—*British Med. Journal, July* 16, 1859, *p.* 563.

9.—SOME ACCOUNT OF DIPHTHERIA AND EPIDEMIC SORE-THROAT, AS THEY HAVE PREVAILED IN THE PARISH OF ISLINGTON IN 1858-9,

By Dr. EDWARD BALLARD, late Lecturer on the Practice of Medicine at the Grosvenor-place School of Medicine: Medical Officer of Health for Islington.

Relation of Diphtheria to Scarlatina.—The following facts may contribute towards solving the problem of the mutual relation of these diseases. In themselves they appear opposed to the hypothesis that they are merely phases of the same malady:

1st. In 7 cases of Class 1 the diphtheritic sore-throat was stated to have been associated with recent scarlatina. In only two of these did the rash appear in the course of the throat affection. Out of the remaining 5 cases in which the rash appeared first and the diphtheritic sore-throat secondarily to it, the rash had in 4 cases left the skin before the exudation upon the mucous membrane made its appearance. I may add that in other instances that have come under my notice both the rash and sore-throat of the scarlatina have quite disappeared before the symptoms of diphtheria set in.

2nd. In 47 instances, 38 of them being of Class 1, I was able to obtain satisfactory information as to the patient having suffered from scarlet fever at more distant periods. The following represents the proportion of those who had and had not thus suffered:—

—	Had Scarlatina previously.	Not had scarlatina previously.	Total.
Class 1 ...	9	29	38
Class 2 ...	1	2	3
Class 3 ...	2	4	6
Total ...	12	35	47

This proportion of 1 to 3 does not, I imagine, differ greatly from that which would be found to exist among persons selected in any other manner from the same ages and the same stations of life. In the 12 patients who had had scarlatina, the occurrence of the disease was dated back to periods varying from six months to five or six years. Now, few occurrences in medical experience are more rare than a second attack of scarlet fever; all writers seem to agree in this. Dr. Willan only met with a single instance in 2000 cases, and Bouchut says that he has never met with a well-authenticated case at all. Still, as I desire to state this question fairly, I may say, that, although I have never myself seen a second attack of scarlatina with rash, I have on more than one occasion seen persons who have had scarlatina attacked with sore-throat when attending upon persons suffering from true scarlatina, and this at a period as short as a year from their own attack. This appears to me a new mode of viewing the matter: it is one on which the experience of the profession should be expressed.

There is a Polymorphism in Disease, as in crystallography. Witness the varieties of true and marked agues, the almost identity of small-pox and vaccinia, the undoubted relation of erysipelas and puerperal fever, of regular and irregular gout, of the several forms of cancer, &c. And with respect to scarlet fever, practical accoucheurs know very well the danger to which a puerperal woman is exposed when subjected to the influence of scarlatina poison. An impression has long been growing up in my own mind that there is a form of fever to which they are liable that bears to scarlet fever the same relation that another form does to erysipelas, and that this fever is of a very fatal type. I have seen several such cases in consultation where no rash or even sore-throat have been developed, but where the woman has sunk as under the influence of a powerful depressing poison. I know that true scarlatina with rash may be developed under such circumstances; but what I am now speaking about is a fever without rash, and bearing characters different from ordinary scarlet fever.

It may be that the amount of protection afforded by a previous attack of any of these polymorphous maladies in one shape against an attack in another shape varies from *nil* to something as nearly

absolute as can be. It seems to me that this is a point to which scientific enquiry might be usefully directed.

3rd. Just as an attack of true scarlet fever furnishes no protection against an attack of diphtheria, so the following case indicates that diphtheria furnishes no protection against scarlet fever. Three children in a family in my district were attacked with diphtheria in August, 1858. Two of them died; the third, aged three years, recovered. I saw these children, and satisfied myself that there was no error in the diagnosis. In January, 1859, the child that recovered was attacked with scarlet fever, after playing about upon a carpet brought from a house where a fatal case of this disease had occurred. There was both the rash and the usual throat affection, but no diphtheritic exudation; and the child died.

4th. Among all the cases, fatal or otherwise, that I have investigated, I have not met with any instance in which diphtheria has appeared to have been communicated from a patient with scarlatina, except where the scarlatina has been communicated also. Neither have I at present met with more than one instance in which cases of diphtheria and cases of scarlatina occurred about the same time in such a manner as to favour the idea that they were varieties of the same disease.

5th. The mortality from epidemic sore-throat during 1858, if this disease were but a form of scarlet fever, would be expected to have borne some relation to the mortality from the latter disease, and to have fluctuated in harmony with it. Such, however, was not the case, as shown by the following table:

DEATHS WHICH OCCURRED IN ISLINGTON DURING EACH OF THE FOUR QUARTERS OF 1858.

—	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.
Scarlatina	9	4	34	69
Epidemic sore-throat	5	15	22	15

The greatest number of deaths from epidemic sore-throat occurred in the third quarter of the year, but from scarlatina in the fourth. The number of deaths from epidemic sore-throat was the same in the second and fourth quarters, while in the former there were only 4 from scarlatina, and in the latter 69.

I may add that as scarlatina declined in the first quarter of the present year, the deaths from epidemic sore-throat (nearly all diphtheria) increased. Thus there were registered 29 deaths only from scarlatina, but 20 from epidemic sore-throat.

Again, the greatest mortality from scarlet fever occurred in the

six weeks from October 17 to November 27. During this period 48 persons died of scarlet fever, but only 5 of any form of epidemic sore-throat, and during 4 of those weeks, viz., from October 24 to November 20, no patient died from epidemic sore-throat. When, however, the mortality from scarlet fever was checked, as it was most remarkably, on the occurrence of the very severe cold about the 26th of November, the deaths from epidemic sore-throat reappeared in the returns.

Relation of Diphtheria to other Forms of Sore-Throat.—The prevalence of sore-throat not diphtheritic in character during the past year, has been matter of general remark. Many, if not most of these throats exhibited some approach to the colour of the mucous membrane when about to become the seat of diphtheritic exudation. These sore throats appear to bear the same sort of relation to diphtheria as diarrhœa bears to cholera in epidemic seasons. Just as in any cases of diarrhœa in an epidemic period, it is impossible to predicate that it will not pass into cholera, if neglected, so, in the ordinary sore-throats which have lately presented themselves, no one would be bold enough to assert that any one might not before long exhibit the characteristic symptoms of true diphtheria. A fact upon which I would especially rely in support of this view, is the occurrence of non-diphtheritic sore-throats equally with diphtheritic sore-throats among the members of families where deaths from diphtheria had taken place. Out of forty-seven families in which a death from diphtheria occurred (Class 1.)

	Families.
Some other members of the family suffered from diphtheria in	9
From other forms of sore-throat in	15
Some members suffered from diphtheria, and others from sore-throat, in	8
Neither diphtheria nor sore-throat occurred in other members of the family, in	15
	47

The severity of these cases of sore-throat varied considerably. In some, it was a slight attack, lasting but a few days; in others, there was so much febrile disturbance as to demand medical assistance; in others, again, there was ulceration, suppuration of the tonsils, or sloughing of some of the tissues. In some families the earlier cases were of sore-throat, in others the earlier cases were diphtheritic.

Is Diphtheria an Infectious Disease? I will state the facts which incline me to the affirmative.

1. A *prima facie* case appears made out by the facts mentioned in the last section. Infectious diseases habitually spread in families they invade. Out of forty-seven families there were only fifteen in which the other members all remained healthy. Of course it may be argued,

in opposition, that all the members of a family are equally exposed to the operation of local causes of disease.

2. As a rule, it spread in the houses it invaded chiefly among those members of the several families who were most closely in communication.

3. In no case where separation from the sick person has been effected early in the disease have I noticed that it has spread to the separated individuals. In one case where communication had been allowed for three days before separation, a child was seized with diphtheria on the sixth day of removal from home.

4. The following special instances may be adduced of communication of the disease from one house to another, viz.:—

Jane J., aged ten years, resided at Islington with her mother, an aunt, and three sisters. On May 1st and 2nd she was on a visit at the house of an uncle, whose daughter, Jane's cousin, was kept at home because she was believed to have a cold. On the 2nd this child exhibited decided symptoms of diphtheria; the attack was slight, and she recovered. On May 6th a servant in this house was taken ill with a severe attack of diphtheria, recognised as such by the physician at St. Bartholomew's Hospital, to which she was removed, and where she died. On the 2nd, Jane returned home, was taken ill on the 3rd with diphtheria in a severe form, and died on May 9. Her mother, and a sister aged fourteen years, were both taken ill on May 11th. She had not been so much with her daughters as other members of the family up to the 8th, when she sat up with her all night. She was of a highly nervous temperament. The tonsil sloughed, and there was a complete cast of the trachea expectorated. She died on the 18th. The sister, who was also attacked on the 11th, slept with her mother, and when not at school was continually in and out of Jane's room, sitting there sometimes for hours together. She died on May 14, asphyxiated. Another elder sister who slept with Jane and the aunt, suffered from nothing but a slight sore-throat.

On September 18, George B., aged two years, was attacked with what was believed to be diphtheria. He was an obstinate child, and the throat could not be fairly inspected. The tissues, however, under the jaw were swollen, and there was difficulty in swallowing; the breath became fetid, the voice lost, there was great dyspnœa, and a discharge from the nose. He died on the 24th. His brother, Edward B., aged nine months, was attacked on September 22, that is, on the 4th day of George's illness. In this case the diphtheritic exudation was marked; there was great external swelling, great dyspnœa, fetor of breath, and bloody discharge from the nose, and from the first the child refused the breast. He died also on the 24th. The father and mother both suffered from sore-throat, being attacked on the 25th. A grandmother also had sore-throat on the 24th, 25th, and 26th. She laid out the children on the 24th, and immediately returned to her own residence in another part of the

parish. A child who lived with her, aged sixteen months, a cousin of those who died, was seized with sore-throat and fever on the 29th. I saw him on October 4. There was then the diphtheritic membrane commencing upon one of the tonsils. He was attended by a general practitioner in the neighbourhood, and died on the 19th.

About the middle of May, sore-throat began to prevail in a large school in Islington. One of the boys, who had just returned home to Kingsland for his holidays, was seized with diphtheria on May 23rd (Whit-Sunday.) The attack was characteristic, and he recovered with difficulty. On June 5th, a boy, aged nine years, who had not returned home, was attacked with true diphtheria, accompanied by laryngeal complication, and died on the 8th. On June 9th, another boy, who was on a visit with some friends for his holidays, was seized with diphtheria; the exudation was well marked, and in consequence of the laryngeal complication, tracheotomy was performed, but he died on the 12th. The sanitary arrangements of the school were not objectionable; the drainage good, and the water-cisterns regularly cleansed. On June 15th another boy returned home from the school with diphtheria. Previously to his return all the family were in good health. Early in July a sister, aged two years, was attacked with diphtheria in a marked form, and died on July 22nd. A brother also was attacked with diphtheria and recovered, and three female servants also had slight attacks. Another sister had an attack of sore-throat. An infant and the father and mother all escaped.

A little girl, aged six years, went to a day-school. A child belonging to the lady that kept the school was ill with diphtheria. On March 3rd, the little girl was attacked, and I saw her twice in consultation. The exudation was well marked and extensive. She died from prostration on March 24th. The father and mother both suffered subsequently from a slight attack of sore-throat. A brother of the patient, who was carefully kept apart from her and ultimately sent away from home, escaped. In this instance, however, there was a local source of disease in a very defective condition of the drainage of the house, and the water-cistern was disgustingly foul.

The connexion of Epidemic Sore-throat with Local Causes of Disease.—The following table exhibits the results of inquiries instituted at fifty-seven houses where fatal cases occurred:—

	No. of Houses	House damp, offensive smells, or defective drains.	Overcrowding or defective ventilation.	Foul drinking water and other nuisances or noxious accumulations.	Nothing discovered amiss.
Class 1 ...	46	19	4	6	20
Class 2 ...	6	3	...	...	3
Class 3 ...	5	2	...	2	2
Total ...	57	24	4	8	25

In more than half the houses, then, which were examined, there was some defect or other in the sanitary arrangements, or in the surrounding conditions of the patient. In the greater number of the houses thus deficient, the fault was discovered in the state of the drainage.—*Med. Times and Gazette, July* 23, 1859, *p.* 77.

10.—TREATMENT PREVENTIVE OF THE SEQUELÆ OF MEASLES AND SCARLATINA.

Many precautions are adopted by physicians to prevent the unfortunate sequelæ of these diseases, and the confinement to the sick-chamber for several weeks after convalescence ranks among them. To avoid this, M. Scoutetten, of Metz, has devised the following method, which we find in the 'Gazette Hebdomadaire,' for April 1, 1859.

As soon as convalescence commences, that is to say, when the skin is no longer red with the eruption, he rubs over the whole body slightly warmed oil of sweet almonds or olive oil, and puts the patient in bed again, for two hours. The next day he gives him a tepid bath for an hour, then places him in bed, and if the skin is very dry, a new friction with the oil is made. These two frictions and one bath are usually enough to remove all danger. Still, in severe cases, it is well, to avoid any risk, to repeat the means indicated from time to time, until the skin regains its suppleness. These precautions taken, convalescents may be permitted to go out without fear of bad results.

In order to justify this method and explain its importance, it is necessary to remember the state of the skin in infants affected with measles or scarlet fever. At the commencement of the disease, the dermis is red and swollen; during convalescence the tissues return to their normal condition, but the epidermis, which has been distended, not being elastic, becomes detached, and falls off in the shape of fine powder when the attack of measles has been light, or is removed in large scales when it has been severe, and especially when the eruption has been that of scarlatina. The skin beneath is dry and harsh; perspiration and transpiration are badly performed, and the functions of this important organ are impeded or suspended. When the skin acts badly, the kidneys and the mucous membrane of the air-passages or of the digestive apparatus undertake to supply its place; thence arises a thick, sedimentous, and sometimes albuminous urine, severe diarrhœas, which terminate in emaciation and death; obstinate coughs, sore throat, croup, pneumonias, pleurisies with effusion; finally, serous infiltrations into the areolar tissue of the limbs, or accumulations of liquid in the abdomen, and in other cavities where serous membranes exist. These severe symptoms occur after an exposure to cold of the skin, which inflammation has rendered more sensitive, and the functions of which are interfered with by an inert

epidermis, which obstructs its pores. The object of the treatment proposed by M. Scoutetten is to oppose the causes of these symptoms.—*American Medical Monthly, Aug.* 1859, *p.* 114.

11.—ON THE TREATMENT OF RHEUMATIC FEVER.

By Dr. G. WHITLEY, Registrar to Guy's Hospital.

[The object of this paper is to ascertain, as far as possible, by an examination of cases treated at Guy's Hospital, by the different physicians of their large staff, what mode of treatment is most successful. Cases of acute fibrous rheumatism alone have been selected for this purpose, being the most definite in their character. The exciting causes of acute rheumatism are cold and moisture; but, there is no more active aiding cause than over-fatigue of a joint. Now if we look upon the heart as being virtually a joint, it becomes easy to understand the liability of persons with irritable hearts to cardiac affections in rheumatic fever. Dr. Whitley continues:]

When we proceed to enquire into the pathology of rheumatic fever we are little better off than before. Several high authorities speak of acute rheumatism as being essentially a blood-disease, a theory which appears to receive much support from one of its most striking phenomena, viz., a great excess of fibrin in the blood. The other chief change observed in that fluid is the presence of a large quantity of uric acid. The evidence in favour of other important changes in the blood, such as an excess of lactic acid from checked cutaneous excretion, is too vague at present to be taken into account.

The excess of fibrin in the blood being assumed to be the most essential change observable in rheumatic fever, while the most striking symptom of the disease is an affection of fibrous tissues, especially the joints, consisting mainly in the exudation of fibrin, the question of the priority of the joint-affection or the blood-change presents itself as one of paramount importance. Here, I confess, I am inclined to adopt the view of Dr. F. T. Bond, that the excess of fibrin in the blood precedes the affection of the fibrous tissues, though traumatic lesions, such as burns, no doubt produce a similar excess. To use Dr. Bond's own words, "Is the hyperinosis merely an effect of the reaction of the local disease upon the system at large, as is generally believed, or is it the primary source of the exudation, the causative agent of the latter, without which it could never exist? I believe this last to be unquestionably the true statement of the case, and shall endeavour to bring satisfactory evidence that it is so. Considered simply in a teleological point of view, the former supposition throws no light whatever upon either the economical object of the hyperinosis, or upon the mode of its connexion with the local affection; whereas, on the later hypothesis, it is highly probable, *á priori*, that an excess of fibrous plasma, rapidly accumulating in the blood to an

DISEASES OF THE NERVOUS SYSTEM.

12.—ON THE NATURE, SEAT, AND RELATIONS OF NEURALGIA.

By Dr. C. Handfield Jones, F.R.S., Physician to St. Mary's Hospital.

[In most cases of neuralgia not arising from organic cause the accompanying debility or prostration is almost as marked a symptom as the pain.]

It is proved by experience that, unless this debility and prostration can be removed, and replaced by healthy vigour, no real progress can be made in the cure of neuralgia. The task is like that assigned to Sisyphus, the patient's and doctor's hope is worn out by ever-recurring relapses. The debility seems in a special manner to affect the nervous system. The brain is languid and dull, and inapt for mental labour; sometimes its function actually fails, and wandering or delirium occurs. Stimuli are beneficial, often very markedly so, though their effect is temporary. Fresh pure air, good food, sufficient repose alternating with exhilarating employment, supplemented or aided, if need be, by nerve tonics, are the real remedies, and just in proportion as they increase the general tone and strength does the patient attain complete recovery and immunity from relapses. On the other hand, just as surely do all causes of debility confirm, increase, and render inveterate the malady.

Now, it may be fairly argued that when the symptoms of debility, and especially of nerve debility, are so apparent, and have so distinct a relation to the particular symptom, this must be itself of like essential character. It can hardly be that the morbid state of the nerve affected can be greatly different from that which prevails so generally throughout the system, especially when we consider the means which avail for the cure of both. Romberg's metaphorical expression, speaking of anæmic hyperæsthesia (i. e., neuralgia), that "it seems as if pain were the prayer of the nerve for healthy blood," is, in all probability, exactly true. The nutrition of the nerve being ill performed, its structure undergoes some molecular alteration which conditionates pain. What is true of neuralgia from this cause I believe is true of all cases belonging to the non-organic class. Electrical disturbances, damp cold, malaria, seem to me all to act in the like way as far as we can judge—viz., by deranging the molecular nutritive actions of the nervous structure, and so impairing its function. There are several circumstances which seem to me strongly to support this view. One is the very frequent co-existence of numbness with the neuralgic pain, especially in highly sensitive parts, as the fingers and hands. One cannot say in what the condition producing numbness differs from that producing pain; but it is clear there is no opposition

between them; both are often present together, and the numbness commonly remains as the more permanent condition in the intervals of the paroxysms of pain, and even after they have ceased to occur. Now, numbness is evidently a failure of functional action. Of the same import is the occurrence of various degrees of muscular paralysis, which is often associated with neuralgia, evidently as an analogous affection of the motor nerves. It yields to the same treatment. The phenomena of myalgia may also be referred to in illustration of the nature of neuralgia. Here we have a manifest instance of the relation of pain to debility: the sensory nerves of the muscles express pain because they are weak; whatever increases the debility increases the pain, and *vice versâ*. The relation of ague to neuralgia is worth considering in respect to this question. It is certain that neuralgia may be a manifestation of malarious influence just as much as ague, and that the two may replace each other. It may also be affirmed that in neuralgia (non-organic) from other causes, the pain-causing condition of the nerve must be the same as in malarious neuralgia. Now, in an ague fit there is no doubt that the vaso-motor nerves are in a paralytic state, consequently it is probable that in a neuralgic paroxysm the sensory nerves are similarly affected. Lastly, we may allude to the cure of neuralgia by Faradization as an illustration of its nature. The pain of a sensory nerve and the paralysis of a motor may both be removed by the stimulus of the interrupted current. *This* surely indicates that both states are similar.

Even in organic neuralgia, it seems to me a matter of much question whether the nerve affected is in a state of exalted excitability, or simply of deranged and disordered nutrition. In lead poisoning, the motor nerves of the muscles are certainly paralysed, the pains are diminished (Romberg) "by pressure and friction," and the whole phenomena are indicative of diminished, rather than of increased vital actions. The curative action of the sulphuret of potassium bath is only intelligible by regarding it as a peculiar stimulus to a great sensory surface, which is reflected from the nervous centres on the paralysed nerves and muscles. That it does produce muscular contraction, at least in some cases, is, I believe, certain. In gouty neuralgia, if we take colicky and spasmodic affections for examples, the disorder is much more of an asthenic than hyperæsthetic character. The pain and suffering attending a characteristic outbreak of gout in the foot have much more the features of hyperæsthesia than the colicky disorder. That a nerve which receives for nutrition blood poisoned by uric acid should be disordered in its acting, and thrown into a state conditionating pain, is very intelligible, but it can hardly be regarded as having its irritability exalted. On the other hand, the nerve lying in a focus of inflammation, by reason of the active hyperæmia, would seem really to be in a state of hyperæsthesia. Its condition is analogous to that of the nerves of one posterior limb in Brown-Séquard's experiment of transverse semi-division of the dorsal cord, where

hyperæsthesia is produced in consequence of paralysis of the vaso-motor nerves, and the resulting hyperæmia.

From the considerations which have been advanced, I am led to conclude, that in the majority of cases neuralgia essentially implies a lowering of the vital power and functional action of the nerve, not an increase. There are, however, certainly cases in which the painful parts are not manifestly hyperæmic, but are yet excessively tender, and intolerant of the least pressure. In these, it is clear that the excitability of the nervous apparatus is morbidly increased, yet I question whether the term hyperæsthesia is properly applied to them. In the state referred to, any, even the least, excitement brings on or aggravates the pain. This certainly implies an undue mobility of the nerve-structure, a readiness to be thrown into the pain-causing condition, but by no means a real increase of sensory power. It is by no means clear that a part in this state would appreciate two points as separate at a smaller distance from each other than it would when healthy. I should not regard such a condition as identical with that induced by partial division of the spinal cord, as in Brown-Séquard's experiments, or by strychnia poisoning. I think it probable that in these cases the morbid action is seated more peripherally towards, or in, the cutaneous terminations of the filaments; while in ordinary neuralgia the larger ramifications or the trunks are affected.

From the preceding discussion, we pass to the consideration of the question—What is the real seat of neuralgia—in the nerves or in the centres? Obviously, this is no easy question to answer. According to the law of eccentric phenomena, every sensation of which we are conscious is referred to the peripheral termination of the sensitive fibres (so Romberg writes). Bowman and Todd add that the sensation is referred to those parts, and to those only, to which the fibres irritated are distributed. According to this view, then, all appreciation of sensations as referred to any point in the course of the nerve is out of the question. An irritation, wherever set up, must be felt at the peripheral extremity of the fibres implicated, and never in any part of their intermediate course. But there are facts which are strongly opposed to this exclusive dogma, and which seem to prove that a sensation may be referred to various points in the course of the nerve-fibre. If we hit our funny-bone, although no doubt pain and tingling are felt at the peripheral distribution in the fingers, yet the chief agony is in the trunk of the ulnar nerve at the part struck, and certainly not merely in the skin covering it. The circumstance dwelt on by M. Valleix, that the specially painful points in nerves affected with neuralgia are always those where the nerve becomes superficial, is also a proof of a sensation being referred to other points besides the terminal. The same may be said of the pains which patients describe as shooting down along the track of a nerve, as the sciatic. These certainly are not located merely in the skin which covers in the nervous trunk.

From these considerations, I am led to admit the possibility of very numerous exceptions to the law of eccentric phenomena, and to believe that pain in a nerve may really indicate by its situation the seat of the irritation or other morbid action. This is a conclusion of some importance to the local treatment of neuralgia. It justifies our empirical habit of applying sedative remedies as near as possible to the seat of pain. But of course we cannot affirm, in any case of pain involving the trunk of a nerve, that the morbid action *may* not be central; the law of eccentric phenomena holds true so far as that central disorder may certainly give rise to peripheral sensation. The only means of certainly distinguishing the site of the pain-causing action is division of the affected nerve. If this arrests the neuralgia, we know the disorder is seated peripherally; if it fails to do so, we know we have to seek more centrally. In a very large number of cases, I fear it must remain problematical as to where the real seat of the disorder is. If—the pain being specially referred to some intermediate spot—injection of opium at that part (subcutaneous) should give more relief decidedly than the same dose at a distance, it would afford ground for believing that the cause of the neuralgia was localized in that spot. In the ordinary way of rubbing sedative liniments on the cutaneous surface over the seat of pain, we have no means whatever of proving a local action upon the suffering nerve, but rather the reverse. For take the case of the sciatic nerve, where pain is acutely felt at the back of the thigh, and notably between the ischiatic tuberosity and the great trochanter; if this is relieved by a sedative application to the covering cutaneous surface, we are sure that the chief action of the remedy must be on cutaneous ramifications of the glutæal, lesser sciatic nerves, and branches of the external cutaneous and other nerves on the front of the leg. These will convey impressions to the spinal centre, not far from the part where the roots of the sciatic are implanted; so that if the neuralgia were of central origin, it is very conceivable that the morbid action might in this way be beneficially modified. But, considering the depth at which the sciatic nerve lies from the surface, it seems quite impossible that the aconite, chloroform, &c., should penetrate so far through skin, fat, and fascia, or even muscles. There exists some evidence to show that any strong impression made on the centre (such as cauterizing the ear, galvanizing the columna nasi) through incident nerves may put a stop to some neuralgiæ.

The relations of neuralgia are of course very different according to the cause which gives rise to it. If, however, we take the commonest kind—which arises from cold, malaria, debility—we must allow that it manifests a very close affinity with non-febrile *rheumatism*. Rheumatic and neuralgic pains are frequently so very similar, that they are only to be distinguished by the action of remedies. Iodide of potassium cures the rheumatic, quinine and iron the neuralgic; while often it occurs that in the same case, after having begun with the

former, we have to resort to the latter to complete a cure. The beneficial action, noticed by several recent observers, of muriate of ammonia in neuralgia, can scarcely be dissociated from its remarkable and positive remedial action in muscular rheumatism. The interesting but obscure phenomenon of rheumatic paralysis is closely similar to, if not identical with, the paralysis or paresis of motor nerves which so often forms a part of neuralgia. *Catarrh* is allied to neuralgia by the similarity of its causes, the manifest implication (sometimes to a grave extent) of the cerebro-spinal nervous system, the resemblance of its inflammatory actions to those sometimes accompanying and depending on neuralgia, and in a large number of cases by its "juvantia." If exhaustion aggravates a neuralgia, so does it also a catarrhal flux; while rest and toning means have an opposite effect. The affinity between neuralgia and *ague* in malarious cases is strikingly apparent; the two disorders so evidently replace each other, that there can be little doubt that the difference is only one of situation: the sensory nerves being affected in one case, the sympathetic system in the other. The therapeutic effects of arsenic and of quinine in ague and in common neuralgia, *rapprochent* the two disorders not a little.—*Lancet, Sept.* 10, 1859, *p.* 258.

13.—ON EPILEPSY.

By Dr. Brown-Sequard.

[If you divide in a guinea-pig one-half of the spinal cord, in the dorsal region, a small spot of skin in the face becomes extremely sensitive, and irritation of this causes an epileptic paroxysm. If this spot of skin be excised, no more fits can be produced. The same sort of thing occurs in the human subject, the spot of sensitive skin being analogous to the spot whence springs the aura epileptica.]

There are probably many of these cases in which a cure of the disease might be easily effected. These means consist in applying a ligature in those cases, which unfortunately are not the most numerous, in which you know that there will be a fit, because it comes on after a general disturbance. The greatest difficulty is in those cases in which the fit is not preceded by any premonitory symptoms; yet the attempt to ascertain the seat of the peripheral irritation is not altogether hopeless. In cases known to be epileptic, but not having the perceptible aura, we may apply ligatures to all the limbs, alternately and successively, beginning at the upper part of each limb, and then by degrees shifting the compression downwards, if necessary, even to the fingers and toes. There are cases of epilepsy, however, in which the patients will not submit to this or even any other mode of treatment. Sometimes we meet with persons in whom a fit of epilepsy will be induced by simply touching a particular part of the body, susceptible of irritation. One such case, which came under my notice,

was that of a young man, who lately killed himself, and who was a student of St. Bartholomew's Hospital, London. There was a particular spot on the top of his head that could not be touched without producing a complete epileptic fit; and his fellow-students very improperly used to amuse themselves by thus producing fits of epilepsy, or at least excessive vertigo, in this unfortunate man. I told him what was best to be done to effect a cure, but he would not allow it to be carried out, and he lately put an end to himself. The treatment of such a case consists in destroying the sensitive portion of the surface by cauterization; not by caustics, but by the actual cautery; and if cauterization does not succeed, a cure may still be effected by a section of the nerve or nerves going to the sensitive part of the skin. There are cases of epilepsy which are not referable to a peripheral irritation; in these cases diligent inquiry should be made to ascertain whether they are not connected with irritating causes existing in some of the viscera, such as intestinal worms, urinary calculi, &c., when the treatment should be directed to the removal of such causes, or of the diseased conditions that may have led to them. There are also cases of idiopathic epilepsy not connected with any apparent cause. I believe, from my short experience, that the remedies most powerful are *belladonna;* and after it, although much less powerful, *oxyde of zinc.* Regards *oxyde of zinc*, Dr. Odier, of Geneva, has published a book, stating a great many cures by that remedy. The physicians in general, however, have not found so much good from the use of this remedy. There is this difference between the treatment used by Dr. Odier and the physicians of France and this country. Dr. Odier gives a larger quantity than the latter venture to give. To be of any decided use, it requires to be given in much larger doses than are ordinarily administered. There are other means, of an external nature, which are very powerful in epilepsy; but it is to be regretted that they are often left to be practised by empirics. These consist of cauterization of the nape of the neck by the hot iron, and sometimes the cautery requires to be continued all along the spine. This remedy is especially of use in cases where there is laryngismus and spasms of the head and neck. Dr. Marshall Hall has greatly overrated the significance of laryngismus in epilepsy. The truth is, that it contributes to the asphyxia, and hence tonic instead of clonic convulsions.—*Lancet, Gazette, Aug.* 1, 1859, *p.* 234.

On Hysteria and Chorea. By Dr. BROWN-SEQUARD.—Hysteria, and similar affections, may arise from external irritation; and may be due to disturbance in the nervous centre, in consequence of irritation of some part of the periphery. In hysteria—a disease which exists in man as well as in woman—we find several interesting cases of this nature. A case is recorded of hysteria in which the attack was produced by slight pressure on a

tumor in the lobe of the ear; the tumor was originally caused by a wound, and the extirpation of the tumor completely removed all traces of the disease. I knew also of a case of a Parisian lady, in whom the pressure of one particular finger was sufficient to induce the hysterical paroxysm. She was not, however, under my treatment, and I do not know what was the conclusion of the case; but I imagine that with proper means the case was quite curable.

Paroxysm of hysteria may be produced by pressure on the ovaries. Frequently the fit is not a complete one; but some of the symptoms —such as colouring of the face, laughing and crying, &c.—are developed at various times. Various affections of the uterus induce the disease. In one case which I witnessed, the uterus was prolapsed, and the hysterical paroxysms were of the most violent character. On the uterus being replaced, the convulsions ceased. After a short time the prolapsus recurred, and the convulsions were renewed. This occurred several times. One of the most curious cases that I know of was that of a child, who one day, on getting out of bed, was suddenly attacked by a slight convulsion, and passed into a complete state of mania. The child was put to bed, and then the convulsion and other symptoms ceased, and he was surprised to see his father and friends in such a state of anxiety about his bed. He asked what was the matter, and knew nothing of what had taken place. He was allowed to get up again, and the fit returned, but ceased immediately on his being replaced in bed. The surgeon in attendance discovered that there was, on the inferior surface of one of the great toes, a slight swelling. Having put his finger on the swelling, while the child was in bed, the fit was produced; convulsion and a maniacal condition came on. When the pressure was removed, at once the child recovered its perfect condition of mind and body. The surgeon cut out the part, thinking there was some foreign body in it, which there was not. It appeared to consist merely of indurated cuticle; but the cure was complete; the child was able to run about, and so continued for several years. He was ultimately drowned; and it was supposed, when these maniacal attacks were remembered, that he was the cause of his own death.—*Dublin Hosp. Gazette, Aug.* 1, 1859, *p.* 234.

15.—ON A CASE OF REFLEX PARAPLEGIA IN WHICH STRYCHNIA WAS SUCCESSFULLY EXHIBITED.

By Dr. William Moore, Physician to the Hospital for Diseases of Children, &c., Dublin.

[The case was that of a porter, aged thirty. States that six weeks ago he was drenched to the skin, and remained in his wet clothes for thirteen hours. This was followed by a general feeling of *malaise*, for ten days, during which time he drank whisky freely. On the morning of the third day after the wetting, he awoke complaining of pain from his armpits downwards.]

I first saw this patient on the 29th of August, when, with difficulty, he was placed in the prostrate position. I examined the spinal column, and failed to detect any evidence of organic disease. He had tenderness—not actual pain—on being tapped over the lumbar region, where the muscles were lax and flabby; he had perfect use of his arms and upper extremities, and, acting from a fixed point, could thus turn his whole body. The pulse was natural, and the tongue clean. In the early stage of the attack he passed his urine in small quantity, and with some uneasiness; that has passed off, and he now micturates freely; urine of a healthy character. In the absence of galvanism with wet sponges, I desired him to be extensively "dry cupped" over the dorsal and lumbar region.

On the following day, August 30th, there was no change of any note. The patient had been very efficiently dry cupped as desired. I now prescribed one grain of strychnia, and a few drops of rectified spirits, with bread sufficient to form sixteen pills, of which he was to take one three times in the day.

On the afternoon of the 31st, the man complained of twitchings and startings in the back, and muscles of the lower extremities generally; can turn himself in bed. To continue the pills as before.

Sept. 1st. The patient got out of bed without any assistance and walked down the ward. No doubt he occasionally faltered and was unsteady, but he never lost the perpendicular, and returned to bed independent of any support. He complains very much of the startings, particularly across the lumbar region, which, he says, awoke him out of sleep, and he is afraid to cough or take a deep inspiration lest he might induce them. The pills to be repeated.

On the 2nd of September this man turned out of bed at once walked steadily, and I may add, briskly down the ward. As he is so much improved to-day, and complains of the jerkings in his back, I omitted one of the pills.

His recovery has since been confirmed in every particular, and, on the 6th, the man was sent out of hospital.

I think this is an instance of what might be termed "peripheral or circumferential reflex paralysis," as it had its origin evidently from standing in wet and cold for so many hours, there being no lesion of the bladder, kidneys, or other viscera to account for its reflection from any of them. I find a somewhat similar case related by Dr. Graves ('Clinical Medicine,' p. 503), where a man was seized with paralysis of the lower extremities by exposing his feet to cold and wet while baling out water in a quarry. Speaking of the prognosis of such cases, Dr. Brown-Séquard says its gravity depends in a great measure on the severity of the disease which induced it. If it does not arise from organic disease or other cause which is in itself generally fatal, it will often admit of cure, and that, perhaps, very rapidly.

The cases where recovery is so decided and rapid are very rare. I find Dr. Watson mentions a case of paraplegia from exposure to cold, in which complete recovery was effected in two days.

G. M——'s case goes to show what a valuable agent we possess in strychnia in paralytic affections, where we have no reason to suspect the presence of myelitis or other organic cerebro-spinal disease. On the treatment of such cases as the above, I am again tempted to quote Dr. Brown-Séquard, who says, if strychnia be administered in the *reflex* form it may be advantageous; but in cases of paraplegia consequent upon congestion or actual inflammation of the cord, if you give strychnia you will always aggravate the affection.

In the above case, after a careful examination, I felt satisfied there was no organic lesion present, and accordingly I prescribed strychnia, having first stimulated the muscles by "dry cupping." I should have preferred the use of galvanism with wet sponges, but, for reasons which it is needless to mention, this was not convenient. The result realized my most sanguine expectations, marked recovery having taken place on the second day. I may add that the "twitchings" were exclusively confined to the paralysed muscles; those of the upper extremities seemed proof against the therapeutical action of the strychnia.—*Lancet, Sept.* 17, 1859, *p.* 282.

16.—*Croton Oil as a Counter-irritant in Hydrocephalus.* By Dr. John Watson, Southampton.—[The author has on several occasions witnessed the successful application of croton oil to the scalp after the setting in of the most formidable symptoms of hydrocephalus. A strumous-looking child, aged two years, on the cure of an eczematous eruption of the scalp, with copious discharge, had an attack of acute hydrocephalus: the symptoms soon became very severe, the child being semi-comatose, and the pulse slow and irregular.]

Thinking it possible for his present attack to be connected with the previous condition of the scalp, as a means of best imitating the eczematous eruption, the croton oil suggested itself. With the sanction of the gentleman who was attending with me, I directed the croton oil liniment (croton oil, half a drachm; turpentine liniment, half an ounce) to be rubbed over the entire head every four hours till a plentiful crop of pustules should make their appearance; after which we soon had an amelioration of all the symptoms, and he gradually became convalescent, though he was unable to speak for several days, and could not stand alone for a considerable period.

It is now several years since the occurrence of this case, which made a deep impression upon me; for I did not remember to have seen a recovery under such unfavourable circumstances. In the same stage of the disease, whatever may have been its assumed cause, I have since adopted the same course, and as far as individual experi-

ence goes, bear testimony to its efficiency. It is not so objectionable to the little patient's friends as a blister, and is at the same time more manageable; and, from the extent of surface to which it is applied, decidedly more powerfully revulsive.—*British Med. Journal, July* 9, 1859, *p.* 540.

17.—ON THE TREATMENT OF TETANUS BY WOURALI POISON.

By Dr. GEORGE HARLEY, University College.

In 'The Lancet' of Sept. 17th, it is stated that—"M. Vella, of Turin, arguing from the fact shown by M. Bernard, in 1850, that the woorara poison is a direct sedative of the motor nerves, undertook a series of experiments which clearly showed the antagonism between strychnine and woorara. Being appointed to the French Military Hospital, at Turin, during the late campaign, and seeing several cases of tetanus which had resisted opiates, ether, &c., M. Vella resolved to try woorara. The first trials were made upon two patients who had been suffering from tetanus for four and five days respectively, in consequence of gun-shot wounds. They were both in a semi-asphyxiated and desperate state. The woorara produced a general relaxation of the muscular system, whereupon the patients felt much relief: but they both died. The same treatment was, however, employed upon a third patient, who recovered. He was a sergeant, thirty-five years old, tetanic from a gun-shot wound of the foot. Two grains of woorara were dissolved in nine drachms of water, and compresses moistened with the solution were applied to the wound; the strength being gradually increased to fifteen grains in fourteen drachms of water. For the first four days the compresses were renewed every third hour; afterwards every fifth hour, up to the twelfth day, when the changes were reduced to three and two in the twenty-four hours. In twenty-two days the patient could leave his bed, and returned to France thirty-six days after the first application of the woorara."

You may, perhaps, remember that in 1856 I pointed out, in the pages of your journal, the antagonistic action of wourali and strychnine—citing three experiments to show that these two substances have the power of reciprocally neutralizing the effects of each other, according as the one or the other poison is in excess. The conclusion I then drew from my experiments was, that wourali might be used as an antidote for strychnine. Since 1856 I have frequently repeated these experiments, and on several occasions have succeeded, by means of wourali, in saving the lives of animals to which I had administered strychnine in poisonous doses.

Two years ago, through the kindness of Professor Varnell, of the Royal Veterinary College, I had the opportunity of trying the effects of wourali on a horse labouring under a very severe attack of tetanus.

Although I did not succeed in saving the life of this animal, I nevertheless saw enough to convince me of the value of the remedy. Indeed, I was so convinced of its beneficial effects that I would have tried it on a boy labouring under traumatic tetanus, whom I shortly afterwards saw along with Dr. Madge, had the disease not yielded to other remedies.

Seeing the success that has attended the administration of wourali poison by M. Vella, and the results of my own experiments, I feel anxious that this substance should receive a fair trial at the hands of the profession. No doubt wourali is a dangerous poison, but in hands habituated to its use I believe it is not more to be feared than opium or any of the stronger drugs.—*Lancet, Oct.* 1, 1859, *p.* 345.

18.—ON COLD AFFUSION IN NARCOTIC POISONING.

By Dr. REEVES JACKSON.

[Cold affusion is a convenient and most effectual remedy in cases of narcotic poisoning, but is not so highly appreciated by the profession as it should be. Often in these cases narcotics cannot be swallowed, the stomach-pump is not at hand, and galvanism, although a remedy of undoubted power, usually cannot be resorted to from want of the necessary apparatus. Three cases are then related, exemplifying the efficacy of this mode of treatment.]

The first was a child eight months old, to which a large dose of Godfrey's cordial had been given five hours before the author saw it. Intense stupor and rapid sinking were present, and the case seemed hopeless. The head being turned downwards, a steady stream of cold water was poured from a coffee-pot over the occiput. When two or three gallons had thus been poured, the child made a long, gasping inspiration, and opened its eyes. They were soon closed again, but after the affusion had been continued awhile longer, the breathing became more distinct, and the child uttered a feeble cry. Suspension of the affusion was attended with complete reproduction of the sopor, which, however, soon yielded on its resumption, and after a while the child having been got to cry lustily, vomiting was produced by means of an emetic and tickling the fauces. In two or three days the child had regained its usual health. 2. A lad, aged 19, suffering from facial neuralgia, drank a large tablespoonful of laudanum. The author was called to him seven hours after, and found him under the full poisonous effects of opium; the surface cold and clammy; the breathing irregular, slow, and stertorous; the respirations eight in the minute; the pulse full, slow and very irregular; the pupils very contracted and insensible to light, the countenance calm and pale. Various means of arousing and exciting him were tried in vain, when cold water was poured upon the head from a large pitcher, held at a height of about eighteen inches. The effect was almost magical in arousing

his sensibility; and, after a while, violent vomiting ensued, all symptoms of drowsiness disappearing afterwards, under the use of a cup of strong coffee. 3. This was an example of poisoning by belladonna, occurring in a lady, to whom it had been administered in an enema for the relief of neuralgia of the rectum. She was found by the author completely insensible, with a swollen, flushed face, slow, unstertorous breathing, and a small, hard (130) pulse. Various means were employed to arouse her without any effect. A large enema of thin gruel was first administered, in order to clear out any of the poison that might remain in the bowel; and a steady stream of water was then poured upon the back of the head and neck. In about five minutes she made an attempt to articulate; and the use of the affusion was suspended, as the patient was cold. Placed in bed, and lightly covered, in ten or fifteen minutes her face became flushed, and she again fell into a deep sleep. The cold affusion was reapplied, and she soon regained consciousness. Although she continued drowsy for some hours, she recovered without the use of any other remedy, her vision remaining dim and confused for about three weeks.—*Med. Times and Gazette, Oct.* 8, 1859, *p.* 367.

19.—ON THE MODE OF EMPLOYING THE HYPODERMIC TREATMENT.

By Charles Hunter, Esq., late House-Surgeon to St. George's Hospital.

The Syringe for Injection.—The little instrument I use is made by Messrs. Whicker and Blaise, it is of the same make (but a little larger as regards the barrel) as their original *caustic syringe.* The barrel is of glass, with silver fittings, and contains a piston which works by a screw-rod, each half-turn of which expels half-a-minim, as a fine drop from the end of the pipe.

Two pipes belong to each syringe, the one larger and stronger than the other; the one here figured A is drawn the exact size of the smaller pipe, which will be found the best for general use; it screws on and off the barrel at pleasure, and is made of silver, with a hardened gold point. This point is sharp like a needle, and perforated on one side (as shown in the enlarged view, Fig. B) by the oblique opening through which the drops of the narcotic or other solution are expelled.

No Incision is required with lancet, or other instrument, when this syringe is used, for the point of the pipe being very sharp and fine, is readily passed, with proper precaution, beneath the skin; no blood is shed, and the operation is no more than the prick of a needle.

The Employment of the Syringe.—Having charged the syringe with the narcotic fluid, hold it in the right hand at the junction of the barrel with the pipe, and with the left hand take up, between the finger and thumb, a fold of the skin of the patient, so as to make tense the part beyond your thumb, then the right hand being gently steadied, but not heavily pressed on the patient, let the point of the syringe, which is held at a right angle to the skin, touch the part which is tense, and, with a *quick but steady movement*, be passed through it; the point being well *through the skin*, the direction of the pipe may be altered so that it may run along in the loose cellular tissue beneath; * all this is the work of a moment; the pre-arranged number of drops are then introduced by so many turns of the piston, the pipe is then withdrawn, a finger making slight pressure as near as possible on the punctured spot, the object being both to steady the skin and prevent any drop of liquid escaping; and lastly, a narrow strip of plaster cut beforehand and warmed, is placed on the spot.

The strip of plaster is generally a precautionary measure, but it becomes a necessity when the quantity injected is large, say twenty minims; but it is always useful to prevent the spot from being chafed. A broad piece of plaster is worse than none at all, it presses on the "little lump" which is caused for a few minutes by the presence of the injected fluid beneath the skin, and not at all perhaps on the punctured spot, and so it does more to press the fluid out than keep it in (I have seen a first injection in a case of delirium tremens fail for this very reason); *but a narrow strip just covers the punctured spot.*

These directions may appear unnecessary, but the operation may fail, as just shown, for want of attention to these little points. If the introduction of the syringe be attempted, the skin of the patient being loose, or the syringe held at the further end, and consequently unsteadily, the patient may by these means be put to a great deal of pain, and the pipe of the syringe may be bent or broken from the socket; but when it is introduced with a quick steady movement, the skin being tense, the patient does frequently not even know when the point is introduced.

The Tissue to Inject.—The tissue injected is the cellular or areolar tissue of the body; it may not matter *much* whether the cellulo-adipose tissue, the panniculus adiposus, or the reticular tissue beneath it (not containing fat) be injected, but the latter is to be preferred; it

* In the majority of cases the plan above described is best, especially with thin people; if, however, the patient is very fat, it is better to perforate vertically a portion of skin and subjacent fat, pinched up, and so made tense between the finger and thumb.

is the looser of the two, fluid injected into it meets with no obstruction, and cannot easily escape from it, but if injected into the skin itself, as some think it is, or the conjoined cellulo-adipose tissue, it is apt to cause pain, it enters less readily, and is more apt to escape; nor does it seem to act quite so rapidly as when injected into the loose cellular tissue from which most probably absorption is the more rapid.

The Part of the Body to Inject.—When the object is to quiet the brain, or to produce a general effect, is it material whether the fluid be injected into the cellular tissue of the body or of an extremity? *No;* the non-necessity of localisation is the basis of this plan of treatment, and is the reason of its applicability in cerebro-spinal affections and general diseases. I need only refer to the various cases detailed in corroboration of this. The site which I, however, most commonly inject, is *the inner part of the arm.* The skin is here thin, easily made tense, and easily perforated; the cellular tissue beneath is loose, and readily receives the fluid; there are perhaps more veins here than in some other parts, but they are easily avoided.

The Quantity of Fluid to Inject.—It is as well to have the fluid of that strength that three or four turns of the piston shall be an ordinary injecting dose. Two or three turns can be made in a moment of time, and it is no small relief or surprise to the patient, who has been expecting, perhaps dreading, an operation, to find all over *in less than half-a-minute.*

The Dose.—Too much caution cannot be employed with regard to the *amount of the narcotic* injected. Two half turns, if your solution is strong, may double the dose, and the life of the patient, for want of due care, be placed in jeopardy; I would, therefore, urge attention to these points:—

1. Be certain of the exact strength of the fluid employed, and the exact value of each turn of the piston.

2. Concerning first injections, never use more than half the ordinary stomachic dose for males, nor more than a third for females.

3. Should a second injection be necessary, let it not be used too soon; nor in a full dose when the patient is partially under the influence of the narcotic.

These points are of practical importance, a *certain degree* of narcotism has to be reached for benefit to accrue, and by the injection it can be reached in many cases by a very small quantity of the narcotic, because of the rapidity with which the effect is produced; what we have to avoid is *too great* an effect; what we try to produce is a *certain effect* with as *small a quantity* as possible. This leads me to remark that men *bear narcotics much better than women.*

I was not aware to what extent this was the case until I had employed this treatment some little while; but I now think it may be looked on as a rule that men in general will bear with no ill effects, but be benefitted by, injected doses of narcotics, which doses would

very strongly, if not seriously affect women; in fact, *this treatment is a test of the exact amount* of a narcotic necessary to produce a desired effect, when taken by direct means into the general circulation. For instance, you introduce beneath the skin the one-eighth of a grain of morphia, the effect which follows is the whole effect of the whole one-eighth; but you cannot be certain that the effect which follows the administration of one-eighth of a grain, firstly, by the skin; secondly, by the stomach; or, thirdly, by the rectum, is the effect of the whole one-eighth; but it is the whole effect of the quantity absorbed.

As by this method we get the *whole effect of the known quantity introduced*, which we are not sure of getting by the other modes, we have now a method as accurate as that of venous injection (without its dangers) for testing the precise effect of little-known medicines on animals, and the exact doses and effects of well-known medicines on man, of seeing the difference which the sex requires in the dose, and of ascertaining the minimum amount required to produce the desired effect.

It is impossible to say "what amount is to be injected" without knowing the particulars of the case, as well as the sex and age; but taking the acetate of morphia for an example, I think that first injections for adult females should vary from the one-eighth to a quarter or one-third of a grain; for adult males, from the one-sixth to half or three-quarters of a grain.

First injections should be small rather than large, and are good indicators of the amount necessary, should repetition be required. It is true that I have seen used and employed myself much larger quantities than those I have mentioned, for first injections; but the cases have been exceptional, and under close observation.

In the preceding papers on this subject I have shown the advantages of this mode of treatment over the endermic, enepidermic, and stomachic methods, which, requiring longer to act, are less certain and apt to fail completely. Before, however, bringing this paper to a close, I would allude to two other modes of medicinal administration, viz., by the tongue and by the rectum.

1. *Medicines administered by the Tongue.*—Dr. Wardrop has shown that there is a remarkable difference in point of time when medicines are absorbed from the stomach or from the mouth, absorption being most rapid from the latter, and the effect is more regular and more equable. Nor is it difficult to say why,—the medicine absorbed from the mouth is taken directly into the general circulation, but when absorbed from the stomach it has *en route* to pass through the portal system; absorbed from the tongue, the effect is more regular, because the medicine is more certainly absorbed *en masse*.

There is, then, much similarity between the hypodermic and the lingual modes. Rapidity of absorption is the great point in the *modus operandi* of each; and with regard to the effect they both have the

advantages of rapidity, greater efficacy, regularity, and equability. Can the one method, then, replace the other? Are they applicable for the same cases and medicines? No; they both have their advantages. Dr. Wardrop's plan is best for the administration of *tasteless* medicines, for calomel, *et hoc genus omne*, but it cannot be used for those medicines which are nauseating and bitter, not, in fact, for narcotics generally, not for cases of delirium, patients refusing medicine, &c., which are the cases where the other plan is most desirable.

2. *Medicines administered by the Rectum.*—This mode of medicinal administration is of great value, and useful as a means both for local and general treatment; there can be no doubt that this method has advantages which the stomachic has not, viz., of greater rapidity of action and greater effect, but the effect is *uncertain;* this uncertainty of action is *not* dependent on the mode of introduction, especially if the medicine be used in the liquid form, and employment be made of the graduated syringe invented by Mr. Spencer Wells to regulate the exact amount introduced; but is due to the want of *regularity of complete absorption*, which cannot be done away with. The rectal method is the more advantageous where the object is to administer the smaller doses of narcotics for affections of the intestinal canal, the rectum, and the parts adjacent supplied by the great sympathetic, but *most especially* for the speedy introduction of stimuli, and of nutriment in urgent cases, for liquids introduced by this plan have the advantage of being conveyed *simultaneously into both* the portal and systemic circulation; the hypodermic, on the other hand, is the more applicable for those cases where the part, requiring the narcotic, is supplied by the systemic circulation, and is under the influence of the cerebro-spinal nervous system.—*Med. Times and Gazette, Oct.* 8, 1859, *p.* 354.

DISEASES OF THE ORGANS OF CIRCULATION.

20.—ON SOME POINTS IN THE DIAGNOSIS AND TREATMENT OF HEART-DISEASE.

By Dr. G. H. Barlow, Physician to Guy's Hospital.

[The principal object of this paper is to show that a considerable proportion of diseases of the organs of circulation in general have a tendency to range themselves into one or other of two large classes, according to which classification our treatment should be in great measure regulated. Dr. Barlow says:]

Now I would premise that, though much labour and ingenuity have been employed upon the semeiology of cardiac disease, and more particularly upon the interpretation of the signs furnished by auscultation, these signs have been too little connected with the general

symptoms, an omission which has, as I believe, somewhat impaired their value in a diagnostic, but still more in a therapeutic point of view. Now, in regard to the arterial pulsations, which we should naturally regard as next in importance to those of the heart itself, I cannot discover that much attention is paid to enabling the reader to connect the different varieties in the pulse at the wrist with different forms of heart disease, and the same may be said of the action of the lungs, the liver, and the kidneys. For instance, we are informed, in general terms, that the liver may be gorged and the urine scanty and turbid in heart-disease, but I think we may look a long while before we shall find it suggested that jaundice, from hepatic congestion or scanty and turbid urine, belongs more to one form of such disease than another.

Let us begin with the aortic sigmoids. When there is exudation of lymph upon the surface of these valves, or between the layers of endocardium of which they consist, there will be more or less narrowing of the orifice through which the blood passes into the aorta, and therefore there will be heard, upon auscultation, a bellows murmur accompanying the first sound, and traceable upwards along the course of the aorta. It may happen, however, and generally does so, when the effusion is between the layers of the valves, that, by the contraction of the effused lymph, the valves become puckered, and consequently, inadequate to the closing of the orifice, and in this case there will be a double or see-saw murmur heard in the position just pointed out. Now, lesion of these valves has a very characteristic influence upon the pulse at the wrist, which, in the case of obstruction, is sharp and compressible, rather defective in volume, but still more so in persistence, when compared with the impulse of the heart. When, however, there is regurgitation through these valves, whether from the above cause or from ulceration or laceration, it is large in volume and very compressible; it is, in fact, of the water-humour or splashing character. The rhythm of the heart, under these circumstances, is not disturbed, and the pulse neither intermitting nor irregular.

If we turn our attention to other organs, we shall find that in the earlier stages of disease of the aortic valves the circulation in the lungs is but little, if at all, disturbed, and, therefore, that, except under exertion, the respiration is easy; the liver is not gorged, and there is fair performance of its functions; and as the portal circulation, as well as the passage of the blood through the cava, is unobstructed, there is a free secretion of urine.

Let us now consider the symptoms of disease of the mitral valves. When such exists, whether it be obstructive or regurgitative, the auscultatory sign is generally supposed to be a systolic bellows-murmur, most distinct towards the axilla, though, in a case of obstruction, it perhaps, extends more towards the right side than in that of regurgitation; the murmur is, moreover, to be distinguished from that arising from aortic disease by its not following the course of the aorta.

I must, however, here express my belief that we ought not to regard the presence or absence of this murmur as deciding the question of the presence or absence of disease of the mitral valves, since its *immediate* connexion with such disease is, to say the least, doubtful. In the case either of obstructive, or regurgitative disease there will be the symptoms of obstruction to the pulmonic circulation—dyspnœa, livor, and other signs of venous congestion, sometimes hæmoptysis—and a very small and often intermittent pulse. The right side of the heart will become gorged, and therefore the liver, the consequence of which will be a diminished secretion of bile, the effects of which will generally show themselves in the colour of the urine and often in that of the skin. From the obstruction to the portal circulation the urine becomes scanty, so much so, that on cooling it generally throws down some of its solid ingredients, especially the urates, and, besides its being tinged with bile, there is often a deposit of purpurine.

Hence, upon comparing these two forms of disease, we see in almost every symptom a remarkable contrast. The pulse, in disease of the aortic valves, is large, splashing, and regular; in mitral disease it is small, and often intermittent. In aortic disease there is little or no dyspnœa, in that of the mitral valves it is urgent. In the former disease the complexion is for a long time natural, in the latter it is, almost from the first, livid, and often icteric. In the former the urine is abundant and clear, in the latter it is scanty, high-coloured, and turbid. And, not to carry the contrast further, let us turn to the mode of death. When death occurs *immediately* from disease of the aortic valves, it is by syncope, when it is from disease of the mitral valve it is by apnœa.

I need hardly say that both the one form and the other of these diseases may be closely simulated by others, a remark which applies more particularly to disease of the mitral valve.

Thus, a dilated ventricle in an anæmic subject, with lax arteries, will present most, if not all, of the symptoms of disease of the aortic valves, and the same may be said of disease of the ascending aorta. Whereas I do not hesitate to say that other forms of pulmonic obstruction, as, for instance, long-continued capillary bronchitis, may present all the symptoms of diseased mitral valve, murmur inclusive I have, however, adduced these forms of disease as typical of the two great classes into which most diseases of the heart—I had almost said of the circulatory system—seem to arrange themselves. I consider that the great difference between them consists in the obstruction, (for, after all, regurgitation is practically the same as obstruction) originating on one side or the other of that great barrier, the mitral valve. The tendency of disease of the heart is to propagate itself backwards, that is to say, in the opposite direction to the current of the circulation. Now this tendency is, in the case of aortic disease, opposed, and often for a long time successfully opposed, by the perfect closure of the mitral valves, so that it is not till after the continued

stress before the left ventricle has, by impairing its strength, led to dilatation, and rendered it unable to empty itself, and consequently to receive so readily the blood from the other side of the mitral valves, that the obstruction begins to propagate itself to the lungs, the right heart, lungs, &c. Whereas the closure of the tricuspid valve being physiologically imperfect, disease tergal to the mitral valve is rapidly propagated—the lungs, right heart, and liver becoming gorged in rapid succession—the effect being much the same whether the disease consists originally in obstruction or regurgitation at the mitral valves, or in impediment to the pulmonic circulation from severe bronchial obstruction.

I have already suggested that the great danger arising from disease of the aortic valves (in the first instance) is sudden death from syncope, an event which has occurred not very unfrequently, whereas the next thing to be dreaded is gradual failure of the power of the left ventricle (generally in the form of dilatation, without compensating hypertrophy,) the consequence of which is that the patient is brought practically to the predicament of a person suffering from disease of the mitral valves, whereas, in the case of the latter disease, we have a rapid supervention of dangerous engorgement of vital organs; hence it follows that, barring the risk of sudden syncope, the danger is much more remote in disease of the aortic than in that of the mitral valves.

Again, as regards the principles of treatment, I may remark that, both for the purpose of obviating the danger of sudden syncope and counteracting the tendency to dilatation, a tonic and often stimulating plan of treatment is indicated, the object being to maintain the tone of the system, and, as much as possible, to prevent the dilatation and promote some amount of compensating atrophy. We must, at the same time, try to relieve the circulation by keeping up a free action of the excretory organs. It would occupy too much space were I to enter minutely into details, but I may mention that I have frequently found the sulphate of zinc useful as a tonic, in such cases. There is also a form of medicine which I have for many years been in the habit of prescribing, somewhat empirically, consisting of a combination of hyoscyamus, nitric æther, and decoction of senega; and I may add, that where there is palpitation from diseased aortic valves, without any other serious complication, the benefit from this medicine is invariably great; and I may add that in other forms of cardiac, and I might almost add of pulmonic disease, the more the pulse and other symptoms approach to those of disease of the aortic valves, the more confidence have I in the senega.

In disease of the mitral valves, on the other hand, although the pulse is much more feeble, I do not find the same advantage from stimulants as in disease of the aortic valves; by their use we often increase the palpitation without strengthening the pulse. In such cases we must look mainly to relieving the circulation through the

portal system, and nothing will be found to give so much relief (notwithstanding the feebleness of the pulse) as free catharsis, after which we may often be enabled to establish a free action of the kidneys. Relieving the pulmonic circulation by free expectoration, where it can be effected, is also a valuable adjuvant; and here I would add, as in the former case, that the same rules of treatment apply to all affections of the circulatory system, in proportion as their symptoms approach to those of mitral disease. And I believe likewise, that we might extend this remark to the opposite forms of subacute or asthenic bronchitis, which we not uncommonly meet with—I mean those forms of the disease in which there is in the one dyspnœa and wheezing owing to the walls of the tubes being thickened and their calibre thereby diminished, and in the other excessive puriform secretion. In the former of these there is obstruction to the functions of the bronchial tubes by change in their structure, and the chief auscultatory sign is wheezing; in the latter, where the chief disturbance is from the great muco-puriform secretion, there are large rattles. In the former there is great lividity; in the latter there is, indeed, a slight livor of the lips, otherwise there is pallor. In the former there is a bloated countenance, and sometimes general œdema; in the latter there is emaciation. In the former the patient dies suffocated; in the latter he sinks exhausted.

I was once led, by the observation of the condition of the left ventricle in poisoning by digitalis, to try the effect of that drug in disease of the aortic valves, where death generally takes place with an opposite state of the ventricles. The result of my observations, however, was that my theory was perfectly wrong, whereupon I had recourse to it in what I consider the opposite form of disease, namely, that of the mitral, and in several cases, although the pulse was intermittent, with marked benefit. It is in such cases too, provided the urine is not albuminous, that the combination of a grain each of calomel, digitalis, and squill, so often successfully employed by my experienced colleague, Dr. Addison, will be found eminently useful.—*Guy's Hospital Reports*, 1859, *p.* 342.

DISEASES OF THE ORGANS OF RESPIRATION.

21.—ON ASTHENIC PNEUMONIA.

By Dr. J. Russell, Physician to the Birmingham General Hospital, and Lecturer on Pathology at Sydenham College.

[The two cases which form the text to this lecture are instances of pneumonia of an asthenic or typhoid type. After briefly mentioning them, the author makes the following remarks upon the disease.]

Perhaps no malady is attended with less uncertainty in its diagnosis than a genuine case of simple sthenic pneumonia: on the contrary,

there are few more insidious than the same disease in its asthenic form. Where asthenic pneumonia exists as a secondary affection, it is not infrequently so entirely destitute of special symptoms that its presence may be entirely overlooked; and were it not for our knowledge of the circumstances under which its occurrence may be expected, our attention might never be directed to the chest. In each of the cases at present under consideration, there was no reason whatever to suspect the existence of the disease prior to the physical examination of the lungs. In feeble or unhealthy subjects, again, pneumonia, although it be the sole or primary affection, is often deprived of some of its most characteristic signs.

When pneumonia occurs as a secondary affection, it is spoken of as intercurrent. It is a more or less frequent complication of many diseases, which are produced by the presence of a poison in the blood; thus it is met with in the course of typhus fever, in erysipelas and surgical fever, in scarlatina, measles, and influenza, in remittent and yellow fever, and, as we have also found, in acute rheumatism. It appears not improbable that it may sometimes exist as the direct consequence of a morbid poison where no other indications are afforded of the presence of that poison in the blood, just as in every epidemic of scarlet fever we find isolated cases in which the characteristic affection of the throat is the only symptom of the disease which is present. Thus, whilst erysipelas is prevailing in the wards of a hospital, and the subjects of wounds or of operations are liable to be seized with that malady, instances every now and then occur of patients similarly circumstanced suffering from asthenic pneumonia, which we have every reason to refer to the poison of erysipelas, although the usual cutaneous inflammation be absent.

But the disease is also met with where we have no reason to suspect the existence of any specific poison in the blood; it may occur after exposure to cold, or to the operation of any ordinary cause of simple inflammation, in enfeebled individuals who have been exhausted by overwork, by anxiety, or by other depressing agencies, or who have lowered their health by intemperance, or by unhealthy habits of life. Such appear to be instances of ordinary inflammation, occurring in a debilitated constitution, which imparts to them their asthenic type. Yet, in many of these cases the early development of delirium, or of diarrhœa, or, as I have seen more than once, of jaundice, together with a manifest and alarming tendency to sinking, affords reason for the suspicion that some poison has either preexisted in the blood, or has been produced by the exciting cause of the disease; and this suspicion is strengthened by the observation, that in such cases the urgency of the symptoms bears no proportion to the extent of the inflammation; thus, I have seen these serious symptoms present, and hasten rapidly to a fatal termination, where the inflammation has been limited to one lung, and absent when it involved the entire lower lobe of both lungs.

Now, where pneumonia is present under any of the circumstances I have indicated, the signs of its existence may be obscure; the energies of the constitution may be so deeply depressed by the injurious influences under which they have been labouring, that the power of reaction is prostrated, and the indications of the disease are proportionally deficient. It is surprising what an amount of inflammation may be inflicted upon the body under certain circumstances, without its appearing sensible of its presence. This want of reaction will generally bear a proportion to the depressing nature of the poison, or of any other cause which has been previously in operation; thus, the poison of measles does not generally exert any very lowering influence upon the system, and the signs of pneumonia, when it occurs, are sufficiently indicative. On the other hand, with the extreme prostration which attends the presence of the typhus poison, the greatest vigilance is necessary to render ourselves aware of the occurrence of the inflammation. Such differences arise, not from any diversity in the inflammation itself, but in the circumstances under which it takes place.

For is pneumonia singular in this respect; other inflammations, occurring under the like conditions, may be equally insidious. In puerperal fever, *e.g.*, we not infrequently meet with instances in which inflammation of other solid organs, of the serous membranes, or of the joints, even runs on to suppuration, without its presence having been ascertained until it has been revealed by a *post mortem* examination.

I will now briefly compare the ordinary symptoms of pneumonia with those which are presented by the form now under our considera- Even in the sthenic form, considerable allowance must be made for variations of symptoms in particular cases; but where the pneumonia has assumed an asthenic character, deviations from the normal are much wider and more numerous.

Inflammatory Fever. In cases where a specific poison exists in the blood, the inflammatory fever is, of course, merged in the peculiar which attends the operation of such poison, and is of a low Where no specific poison is present, the inflammation may set in a rigor, and sometimes with sharp feverish reaction; but the ns speedily assume an asthenic character, and may be attend- at an early stage, by delirium and other serious symptoms; patient may manifest a marked tendency to sink. In all ticulars, however, there is great variety. In a case of un- ed pneumonia, which I saw the other day, the pulse sank e hundred after the third day. In another similar case, in h lungs were involved, the intellect was clear, and the pulse one hundred after the third day; whilst in two others, in hich only a single lung was affected, the pulse was rapid; low delirium, and in one, retching, diarrhœa, and floccita- death occurred in both, at an early period, with every f exhaustion.

Pain in the Side may be absent, even in ordinary pneumonia; it is more frequently so in the asthenic form; or, if present at first, may speedily sink into a very subordinate position. In some cases, the pain occupies a situation more or less remote from the seat of disease. Such deviation is by no means peculiar to the asthenic variety; but it becomes of greater importance in that form, on account of the absence of other indications, and the consequent danger of misleading the observer. In one case the pain was seated in the upper and anterior region of the chest, the lower lobe being affected; in another it occupied the region of the left hip; and so free from urgency were the other symptoms, that the patient had actually weathered the first stage when I saw him, and had come down stairs. His hurried breathing, with his cough, directed my attention to his chest, and I found the entire lower lobe of the lung consolidated. Pain in the flank, or iliac region, is sometimes an attendant of inflammation, probably of the base of the lung. In one remarkable instance, I believe the pain was seated in the pillars of the diaphragm, as it was chiefly occasioned by hiccough, which followed the presence of food in the stomach, and was so intense on any attempt to move the trunk, that it was next to impossible to examine the posterior region of the chest.

Cough and Expectoration are subject to much variation; the cough is not infrequently slight. In one of our hospital patients we should hardly have paid attention to it, although there was no dulness of sensibility, and his intellect was perfectly acute. On the other hand, it may be remarkably violent; I have seen it almost spasmodic. It is important to know that expectoration is often scanty, and may be entirely absent. It was trifling in quantity in both of our patients. It was entirely absent in three cases which I call to mind, although in one of them, which was examined after death, the inflammation had affected both lungs. When present, the sputum is often composed of semitransparent mucus, of considerable adhesiveness; but without the peculiar gelatinous tenacity and the rusty colour of the expectorated matters in the sthenic disease.

The Respiration presents, perhaps, the most unvarying physiological symptom. There may be little or no complaint of oppression; but, excepting in instances of great prostration, the breathing is much increased in frequency. This symptom will often be very evident by comparison with the pulse; whilst the latter may vary in the number of its beats day by day, the breathing continues steadily frequent, thirty-six, forty, or more respirations being performed in a minute.

The reason is evident. The amount of space available for the purposes of breathing being lessened, compensation is made by increase in the frequency with which the air is transmitted through the lungs. In asthenic pleurisy, also, this symptom is present. Cases of this disease, which sometimes present themselves in the out patient's room, in which the patient makes no complaint of the chest, often

first arouse our suspicion by the unhealthy frequency of the breathing. I need hardly refer you, however, to one of our cases as obscuring even this system. In the girl in ward sixteen, frequent and irregular breathing was sufficiently accounted for by rheumatic affection of the *intercostal* muscles; and you may have noticed her distress on more than one occasion, when, on awaking from sleep, her irritable muscles were suddenly required to assume a state of greater activity.

In the obscurity which attends the general symptoms of asthenic neumonia, our great dependance must be placed upon our knowledge f the circumstances under which the disease is most liable to occur; d it very fortunately happens that when our attention has been di-cted to the state of the chest, the clear indications which are afforded the *physical signs* at once deprive the case of all uncertainty. e physical sign, however, usually present in the acute form of the ease, I have found absent in some cases. I allude to crepitation; *nchial* breathing being the first abnormal sound I have discovered. is possible that, from the obscurity of the general symptoms, the stage of the disease may have passed before the examination *been* made; but this explanation certainly does not apply to y case, and the scanty amount of the expectoration sometimes :ved, affords corroborative evidence in favour of the statement ve *just* made. Sometimes the signs of consolidation are pre- by crepitation in the small bronchial tubes, the pneumonia ring as a sequel of capillary bronchitis. From the absence of ation, especially when coinciding with deficient expectoration, ossible to mistake the case for one of pleurisy. The diagnosis, er, is easily effected; for, besides that vocal vibrations are t, with abnormal intensity, on the affected side, the peculiar f the dulness forms a distinctive sign of great certainty, when lammation is seated on the lower lobe. The lower lobe of g occupies the entire posterior region of each side of the chest, ng only the supraspinous fossa. The lateral and anterior correspond with the upper lobe on the left, with the upper ldle lobes on the right; consequently, in the cases I am now ; of, whilst the chest is dull behind, even to the spine of ula, in the lateral space and in front—as was the case with patients—it is clear; the line of demarcation approaching direction—a direction of course impossible with free fluid est. The only form of pleurisy which could afford a similar at in which the fluid effusion is limited by adhesions.

ay, perhaps, expect me to assign the absence of the chlo- the urine as an additional diagnostic sign of the presence nia; but since attention has been drawn to this subject by ations of Dr. Beale and others, the symptom in question ound to be by no means peculiar to inflammation of the to be present in other forms of acute disease.

pneumonia, like all low forms of disease, is more liable to

irregularity in the manner of its occurrence than the sthenic form. It may present itself in the upper lobes of the lung, or in the central parts. In a case the other day, the patient, who had been depressed by severe anxiety and worry, was attacked with fever, pain in the chest, and rapid breathing (from thirty to forty); but no physical signs presented themselves, excepting some prolonged expiration in the lower lobe of the lung for five or six days, when the usual signs of consolidation were manifested, preceded for one day by crepitation and rhonchus. It is probable that in this case the inflammatory action commenced in the centre of the lung.

In forming your prognosis, there are two elements for your consideration; the inflammation, and the condition of system with which it is associated. Now of these two, the latter is by far the more important. Pneumonia, though a sufficiently serious disease, has, if uncomplicated, a strong tendency to recovery; but this tendency may be overcome by the noxious influence of a poison in the blood, or by a state of constitution in which the powers of the body have been prostrated by debilitating influences. Hence your judgment will be regulated rather by those symptoms which relate to the state of the patient's general health, than by those which indicate the extent of the inflammation. The same circumstances will influence the progress of recovery. A state of cachexia will not only retard this process, but may even turn it into a very unfavourable direction. It promotes degeneration rather than repair, and hence may create a tendency to suppuration or gangrene. We had a striking illustration of the truth of what I have said in the hospital the other day. (British Medical Journal, May 7th.)

There is one awful accident which sometimes happens in this disease, of which it is very necessary that you should be aware—the occurrence of sudden death by fainting. I have twice seen this unhappy termination to the low form of pneumonia; and once to acute bronchitis occurring with miliary tubercles, and with the heart in an early stage of fatty degeneration. Two of the three patients had suffered from much anxiety, and from overwork; of the third I have no information in this particular. I have also been told by a friend, of a case of subacute pleurisy, in which death took place in the same manner. One of my patients died as she was in a semi-recumbent posture, arranging her hair. Another literally passed from sleep to death, and was found in the attitude of quiet repose.

The subject of treatment would afford matter for an entire lecture. I shall content myself with simply indicating the principles by which you must be guided. I have already stated that pneumonia, when uncomplicated, has a natural tendency to recovery. The danger, therefore, arises more from the circumstances which attend it, than from the inflammation itself; and such circumstances must receive a considerable share of attention in the treatment. Not that I would lead you to disregard the inflammation; I only desire to place

the other elements of the case in their proper position. The more accurate physiological knowledge we now possess, has defined with greater precision the position held by the blood-vessels in the process of nutrition, and has taught us that changes in the circulation of one organ, must be explained by alterations in the nutritive condition of the organ affected, or of the system at large. We no longer regard inflammation as an entity of itself; but as one of a series of changes in the nutritive process; and these other changes often demand a still larger share of our attention. Impure states of the blood, depraved conditions of nutrition, the presence of tubercle or of cancerous deposits, often assume greater importance in our estimation than the local inflammation they may provoke.

Now in the disease in question, the concurrent circumstances indicate either that the cause itself of the inflammation seriously depresses the nutritive powers, or that it is allied with some other agency which tends to produce the same effect; and we have to do our best to prevent the favourable tendency of the inflammation from being overborne. On this account, sedatives, especially tartar emetic, which are of much use in sthenic pneumonia, are often quite inadmissible; and in favourable cases, can only be employed in the early stage and in moderate doses.

Blisters, on the other hand, which are of questionable utility in the early stage of the sthenic form, are of much service. A few leeches may afford much relief to the pain. Mercury has the high opinion of Dr. Watson. I would, however, venture to suggest that it is apt to be attended with the inconvenience of producing some diarrhœa; and I have seen recovery imperilled by its presence.

In consequence of the tendency to depression which is so frequently prominent in these cases, stimulants will very often constitute important remedies. Their quantity must be suited to the requirements of the particular case. In a case to which I have just referred, the patient did well with only a few doses of ammonia. Here, a stronger stimulant would have been unnecessary, and therefore injurious. On the other hand, in the pneumonia of children, or of erysipelas, or in the uncomplicated form, where delirium is present with a rapid pulse, and other signs of prostration, wine and brandy must be given with a free hand. Between these extremes there will be every gradation. The object of stimulants is to keep up the energy of the circulation; and their employment must be regulated by the state of that function. On the other hand, wine and brandy do not contain nitrogen, and therefore cannot be appropriated to the tissues as food; they are no doubt entirely eliminated. It is therefore, be desirable not to load the blood with an unnecessary quantity of excremental matter, especially when so important an organ for carbonaceous matter as the lungs, is diseased.

In these precautions, stimulants must hold a very high place

among the remedies for asthenic pneumonia, especially as it presents itself among our town populations.

Opium, which so frequently accompanies stimulants in the treatment of disease, often proves a very valuable remedy. Regard must, however, be had to the tendency of the particular case. Some morbid poisons are narcotic in their action, and tend to produce stupor. This is sometimes the case with the typhus poison, for example; when such a tendency is observed, the employment of opium, at all times dangerous, would be doubly so with the respiratory surface seriously lessened. It is when the symptoms of asthenia exist without this complication, that this medicine lends its invaluable aid.

I need not say that due attention must be paid to the state of the secretions, and particularly to the alvine evacuations; and that while you secure the necessary relief to the action of the bowels, you must avoid weakening your patient by the undue administration of purgatives, particularly those of the more powerful class. Support, by light nutritious diet, is of great importance. By the judicious administration of beef tea, in small quantities, at short intervals, you may, in mild cases, even avert the necessity for stimulants, or at least for those of the stronger kind.—*Brit. Med. Journal, July* 2, 1859, *p.* 524.

22.—*Syphilitic Pneumonia.*—We well remember hearing Dr. Stokes describe a form of pneumonia common amongst drunkards, and which he called "drunkards' pneumonia." There is also an inflammatory consolidation of the lung which owes its origin to the poison of syphilis, and hence is well worthy of the appellation of "syphilitic pneumonia." At the Royal Free Hospital, on the 22nd ult., we were shown a well-marked case of the latter, under Dr. O'Connor's care; the patient, who was admitted about the middle of July, being thirty-five years of age. His syphilitic history was clear, and was associated with a papular eruption, some of the copper-coloured spots being visible up to the present time about the back and shoulders. On his admission, the physical signs of pneumonia were present, the dulness over both lungs was very considerable and extensive, and the vocal resonance was strong and distinct all over each. The dyspnœa, therefore, was urgent, but the breathing was not so embarrassed as in ordinary pneumonia. There was also frequent cough, without expectoration, associated with much wasting, and a small and quick pulse (100). His treatment consisted of blisterings all over the chest, five-grain doses of iodide of potassium from the 23rd to the 28th of July, and four grains of mercury-with-chalk and conium thrice a day. On the 2nd of August, a grain of iodide of mercury, with four grains of extract of conium, three times a day, were ordered, and continued till the mouth became sore; and a quarter of a grain of muriate of morphia every night. The gums are tender now; he is taking iodide of potassium with his cough mixture, and the

isease is yielding. One of his testicles was much enlarged, of a pyri-rm shape, and indurated, principally depending upon enlargement of ıe epididymis. His voice is hoarse and husky.

This is one example in some six or seven which have been admitted lo this hospital with the symptoms of inflammatory chest disease, arly the result of syphilis. A case, in many respects similar to it, nder Dr. Willshire's care at the Charing-cross Hospital, differing y to this extent, that the bronchial tubes, trachea, and faucial cous membrane have been affected, instead of the lung tissue. The ient is a middle-aged woman, whose history is obscure, but the rations and other peculiarities point to syphilis as the cause of the ase. The secretion from the tubes is copious, and occasionally orrhagic. She has much improved under the use of the syrup of odide of iron.

e have seen cases in the Royal Free Hospital, under Dr. O'Con- care, wherein the evidences of phthisis were present, with an ıce of the physical signs of the disease, the symptoms depending constitutional syphilis, and readily yielding to the exhibition of ry.—*Lancet, Sept.* 3, 1859, *p.* 238.

—*Treatment of Phthisis by Carbonate of Lead.* By M. Beau. ling to M. Beau, it is extremely rare that a case of phthisis is among workers in lead. The immunity which he had observed respect led him to try the efficacy of some of the preparations mineral in arresting the progress, and in entirely eradicating erculous diathesis.

ives the preference in his trials to the carbonate of lead, which tion being insoluble, he considers as less liable to produce an rable reaction upon the stomach. He administers it in increas- s, from 10 to 80 centigrammes (2 to 16 grs.) each day, in pill, ; or suspending the use of it as soon as the patient appears to ently impregnated; that is, as soon as the symptoms charac- the first degree of saturnine poisoning appear, such as arthral- gesia, lisere, and an icteroid tint.

au reports five cases, in four of which certain symptoms, the cough and the expectoration, seemed to be favourably by the use of the carbonate of lead. He does not, however, a complete cure, and adds, that as an auxiliary to this n, it is necessary to support the patient by the best possible y nourishing food, wine, tonics, and causing him to observe es of a rational hygiene.—*American Medical Monthly, Aug.* 15.

: *the peculiar Efficacy of Sulphate of Copper in Exciting in the Treatment of Croup.* By Dr. Missoux.—The of repeated vomiting in the treatment of croup is admitted

by many practitioners, but the choice of an emetic is a point which has not hitherto been fully determined. Since vomiting has been considered by some as the mechanical act which induces the detachment of the false membranes, tartar emetic has been employed for the purpose. Others have preferred ipecacuanha, the dynamic action of which is less depressing than that of tartar emetic, but there its superiority ends. The sulphate of copper, in addition to its emetic action, possesses a very remarkable property of acting locally, and this peculiarity makes it superior to tartar emetic and ipecacuanha. With the latter substances, the patients derive benefit only from the mechanical act of vomiting, and when the false membranes are expelled, others are formed. The case is quite different with sulphate of copper, for when a solution of this salt is employed, the secreting surfaces are so modified, that no more false membranes are formed, or if they are formed, they no longer present the plasticity which renders them so adherent to adjoining parts. Dr. Missoux, after a practice of eighteen years, states that the sulphate of copper has been in his hands the most successful emetic agent in the treatment of croup. Its purifying action appears to him the more valuable, because diphtherite (croup) at its commencement is often localised in the throat, and by applying remedies early, the extension of the false membranes to the larynx may be prevented. He wonders that this topical action of the copper salt has not been hitherto observed upon plastic exudations which are visible to the eye, such as cutaneous diphtheria, and that of the vulva, the throat, and the nose, for its effects in these complaints would have induced a speedy conviction of its utility. The dose in which Dr. Missoux administers the sulphate of copper is rather larger than that prescribed by other physicians. For young children he dissolves a quarter of a gramme of the salt in 125 grammes of distilled water, and orders a teaspoonful to be given every ten minutes, until vomiting is produced. After the age of puberty, and in adults, he increases the dose to one gramme, without his having ever witnessed any poisonous effects. The more the solution is concentrated, the more frequently the doses are given, and the earlier its administration is resorted to, the more prompt and certain are the effects of the treatment. Out of thirty diphtheritic cases, Dr. Missoux lost only two. This result may surprise some readers, but he assures the profession that he has determined the existence of croup only after actually observing the presence of the false membranes in the bronchi, trachea, and larynx.—*Brit. and Foreign Med.-Chir. Review, July* 1859, *p.* 245.

25.—*Croup—Enlarged Tonsils.*—M. OTTENBOURG informs the Medical Society of Paris, that observation has led him to the conclusion, that permanent enlargement of the tonsils protects against croup. Children, exposed to the infection of croup, having enlarged

tonsils escaped the disease, while others without hypertrophy of these organs contracted croup. This view of the matter has led M. Ottenbourg to this practical result. He advises the parents of children not to allow their enlarged tonsils to be removed.—*Med. Times and Gazette, May* 21, 1859, *p.* 517.

26.—*On the Employment of Veratria in Acute Diseases of the Chest.*—M. Aran has called the attention of practitioners to the remarkable effects produced by the internal use of veratria in febrile diseases, and especially pneumonia. In the Sardinian Medical Gazette an article has appeared, in which Dr. Ghiglia, without any knowledge of M. Aran's researches, recommends the use of veratria in the same circumstances, except that he never employs this alkaloid alone, but associates it almost always with opium, sometimes in the form of pill, sometimes as a syrup. The dose of veratria is five millegrammes (077 of a Troy grain) in a pill with the same quantity of opium, and the number of pills to be taken in the twenty-four hours varies from six to seven, and even twelve, according to the circumstances. At this dose, according to M. Ghiglia, vomiting rarely occurs, but nausea and the other depressing effects of veratria are present. The results obtained by M. Ghiglia in certain cases of pneumonia, bronchitis, and broncho-pneumonia have been sometimes most remarkable, but have been occasionally unfavourable, and the following are the results arrived at by this author: "1. The inflammations of the respiratory organs, when they have arrived at such a period as to produce disorganisation of the parts, are not improved by the use of veratria. 2. The action of this substance is the more favourable in proportion as the disease is more recent. 3. The tolerance is very various, according to individual habits, and perhaps also according to certain peculiarities which are not yet well understood. 4. The more easily the tolerance ceases the more marked is the depression. Veratria is in many respects a preferable medicine to others which are more constant in their action but less easy to take. And 6. It is perhaps prudent, in severe inflammations of the respiratory organs, to order a few bleedings before prescribing the veratria.—*Edin. and For. Med.-Chir. Review, July* 1859, *p.* 242.

DISEASES OF THE ORGANS OF DIGESTION.

ON DEFECTIVE ASSIMILATION IN INFANTS—ITS PREVENTION AND TREATMENT.

By Dr. Routh.

The greater part of the mortality of infants is due to defective assimilation—the result of want of breast-milk, and the use of injurious food. Diseases of defective assimilation are favoured by here-

ditary tubercular habit, exanthemata, bad air, and want of cleanliness. After death, when diarrhœa has been present, red patches or aphthæ are found on the alimentary mucous membrane, or a reddish-coloured intensely acid mucus is found exuded from it.]

The disease seems to be gradual, passing on to entire loss of *primary* assimilation; the secondary still persisting, although inactive from want of assimilable matters to take up. Albuminous, starchy, and oily matters were not digested.

The *treatment* consists in supplying fatty acids and already artificially digested animal and occasionally vegetable substances, especially human milk. If this could not be sucked, it should be collected in a cup and given by the spoon. Dr. Routh strongly animadverted here upon the absurd dogma, that it is wrong to mix human and cow's milk. He, on the contrary, believed the plan not only safe, but the very best practice in many cases, and the only means of saving an infant's life. Simple juice of meat, and this with vegeto-animal food, he had found most useful in fulfilling these indications. The remedies were of two kinds: 1st. Those calculated to increase cell growth and development. Phosphate of soda, producing an emulsion with fats, thus allowing of their assimilation; chloride of potassium, to dissolve carbonate of lime; phosphate of lime, to enable blood to take up more carbonic acid, and thus hold in solution more carbonate of lime; (these substances severally strengthening muscular and bony structure;) lime-water, to provide lime to blood. 2nd. These last also acted as some of the remedies calculated to allay local irritation of the alimentary canal. Carminatives were useful, such as dill, but especially cinnamon-powder, to correct flatus and to check diarrhœa. Anodynes were also (however objected to generally) strongly recommended by the author. For the diarrhœa, when present, nitrate of silver and sulphate of copper were the best remedies. Wine was also found very serviceable, even if given in large quantities. These remedies, however, it must be confessed, proved in most cases of no avail in the third stage, which was, he might say, almost incurable; but they acted very effectively in the second and first stages.—*Lancet, June* 18, 1859, *p.* 613.

28.—CASES OF ASCITES, APPARENTLY ARISING FROM CHRONIC PERITONITIS.

By Dr. William Paley, Peterborough.

[This paper, which was read before the South Midland Branch of the British Medical Association, is an abstract of thirty-six cases of ascites, apparently arising from chronic peritonitis. It is noteworthy that in most of the complications in these cases, the strumous diathesis seemed strongly marked. The disease is essentially chronic, more liable to supervene in young persons, especially females; four-

en of the cases being males, and twenty-two females. In only one se, out of the five which died, was an examination permitted, and this, the peritoneal surface was studded with tubercles, and a conlerable quantity of sero-purulent fluid was contained in the peritoal cavity. With regard to the treatment the author remarks :]

Treatment.—In the earlier cases, I tried diuretics, purgatives, and nter irritants without much effect; then I used the iodides, prin-*ally the* syrup of iodide of iron, and friction over the abdomen, h ointment of iodide of mercury, both, I am bound to say, with l effect; still the absorption of the fluid went on very slowly; a course of treatment was required before it could be effected, and patient's strength was very apt to give way in the meantime. ast I tried cod-liver oil, and found it so successful, that for the ight years it has always formed the basis of my treatment. I ally give at the same time the syrup of iodide of iron, if there *diarrhœa*, and use friction over the abdomen with the iodide of ry ointment. I lay great stress also upon keeping my patients ch as possible in the open air, giving a nourishing but unstimu-*diet*, carefully avoiding either invaliding them or reducing their th by too active remedies. If there is diarrhœa or very much n the abdomen, I give small opiates, either with or without ents, as the bowels may require. In two cases only, from the listention of the abdomen, was the operation of tapping thought le; in one, a child, it gave no permanent relief, the body filling n a few days: it was not therefore repeated. In the other at of a man, in which I suspected an abdominal tumour, it *form*ed four times, and seemed materially to assist the cure, ntity of fluid diminishing after each operation.

nclusion, and lest any one should be disappointed in not *le to* effect a cure so rapidly as he could wish in similar cases, st mention the length of treatment required in the cases ne, one week (died); four from two to three weeks; two ee to four weeks; two from four to five weeks; two from x weeks; four from six weeks to two months; eight from ree months; four from three to four months; three from x months; three from six to nine months; two from nine months; one eighteen months.—*Brit. Med. Journal, 1859, p.* 587.

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*ER*OUS STOMATITIS IN THE ARMY.—CHLORATE OF POTASH.

stomatitis, which almost exclusively occurs in private **ong pauper** children, and more especially when they are **gether** in hospitals, asylums, and workhouses, is also far **mon** among our young soldiers. In consequence of excep-

tional circumstances caused by the Crimean war, several physicians attached to the civil hospitals were entrusted, in 1855, with medical wards in the military hospitals of Paris. M. Bergeron occupied one of these temporary situations, and to that circumstance we are indebted for an excellent memoir on ulcerous stomatitis in soldiers, and its identity with the peculiar stomatitis of children which has been called ulcero-membranous.

In his wards, at the Hôpital du Roule, M. Bergeron was much struck with the frequency of ulcerous inflammation of the mouth among the garrison of Paris at that time, the disease chiefly attacking recruits. The development of the affection was clearly under the influence of hygienic circumstances—a fact proved by the privates being more subject to it than non-commissioned officers, and the latter far more than officers. As causes of the malady M. Bergeron indicates the want of variety of the food, the insufficiency of the regulation supply of spirits, crowding, and, as an agent of propagation, contagion. He also ascertained that suppuration within the alveoli constitutes a local predisposition to this specific form of stomatitis.

From M. Bergeron's interesting researches we also gather the following singular and unexpected fact—viz., that the disease is all but unknown in the navy, and that it has been observed neither as an endemic nor as an epidemic affection in the armies of Great Britain, Austria, Denmark, Egypt, Holland, Naples, Prussia, Sardinia, Saxony, Sweden, Tunis, or Wurtemburg; that, moreover, it is almost as frequent in the Portuguese army as in the French land forces, and that it occasionally is met with in the Belgian troops.

Endemo-epidemic stomatitis is anatomically distinguished by ulcerations of various form and extent, chiefly occupying the gums and inner aspect of the cheeks, but which may invade any part of the mucous surface of the mouth, and by enlargement of the submaxillary or cervical glands. These changes are invariably attended with much pain, abundant salivation, and extreme fetor of breath. Ulcerous stomatitis has nothing in common with diphtheria, and differs fundamentally from *gangrene of the mouth*, *phagedenic sores*, or scurvy. It is entirely identical with the buccal inflammation of children, which has received the denomination of *ulcero-membranous stomatitis*.

When properly treated, this disorder terminates favourably in ten days; whereas, if abandoned to nature, it may last as much as three months, and is therefore deserving, in the highest degree, of the attention of the profession.

The most rapidly efficacious method of treatment, the safest, and at the same time the least troublesome, consists, in the present state of science, in the exhibition of chlorate of potash, preceded or not by an emetic. The chlorate being, however, not very soluble in cold water, and being liable to deposit, if merely added to the mistura acaciæ, it occurred to M. Vial, chief apothecary to the hospital of the Roule,

to prepare a warm solution at 1-20th, to be added to the excipient. Thus M. Bergeron's prescription consisted of—

℞. Mist. acaciæ ... ... 12 dr.
Solut. potassæ chloratis ... ... 16 dr.

to be taken in four doses, at intervals of three hours. When, after six or seven days' treatment, and gradual improvement, the reparative action was suspended, the dose of the solution of chlorate was increased to three ounces, and if no beneficial results followed this augmentation, the exhibition of the chlorate of potash was temporarily interrupted, and the dry chloride of lime substituted. In most instances, however, a speedy cure resulted from the use of the chlorate alone. The great benefit conferred upon the army by the introduction of this substance into medical practice in military hospitals, from M. Bergeron's felicitous applications, is obvious. Of course, in order to check the development of the disease, and rid our regiments of this endemo-epidemic affection, hygiene must interfere; and it is by improvements in the food, in the repartition of duty, and chiefly in barrack accommodation, that M. Bergeron deems this end may be attained. While looking forward to the realisation of these reforms, perhaps it might be possible, by some simple measures, greatly to diminish the chances of ulcerous stomatitis. M. Bergeron expresses the opinion that soldiers should be compelled to submit to examination of the cavity of the mouth, and that, when the presence of the disease is duly ascertained, the patients should be isolated, and placed under the influence of the chlorate of potash medication. M. Bergeron also suggests, that instead of merely requiring that a tooth-brush should form part of a soldier's necessaries (a good thing, of course), he should be under the further obligation of using it with the same punctuality observed in the performance of ablutions upon the head and hands, which are at all times strictly enforced.—*Journal of Practical Medicine and Surgery.—Dublin Hosp. Gazette, Aug.* 1, 1859, *p.* 236.

30.—THE CEREBRO-SPINAL SYMPTOMATOLOGY OF WORMS, ESPECIALLY TAPE-WORMS.

By Dr. Thomas P. Heslop, late Senior Physician to the Queen's Hospital, and Professor of the Practice of Physic, Queen's College, Birmingham.

[Serious aberrations in the nervous functions are caused by the presence of intestinal worms. The author establishes this proposition by a reference to the whole of his recorded cases during the past seven years; observing that cases obtained from the entire experience of one observer extending over a period of many years are less likely to lead to error, than those observed by many different persons, none of whom may have taken the requisite precautions to exclude error.]

I have observed that the symptoms of the presence of worms have, in fact, a striking uniformity, and give a peculiar physiognomy to a case. Since the first part of this paper was in print I have seen a good illustration of this. A lady, about thirty-five years of age, of pale complexion, consulted me for most obstinate headache and general neuralgic phenomena. The senses were dulled; the skin dry; thirst considerable; urine much more copious than natural, and pale. Though doubtful of the real nature of the case previous to an examition of the urine, I yet ventured to hint that probably worms were at the bottom of her neuralgic complaints, and prescribed an anthelmintic draught. No worms were passed, and the urine was found, though of low specific gravity, to be free from any other peculiarity. The idea of worms was almost abandoned, yet, three or four weeks afterwards, a very large lumbricus was passed into the clothes while going up stairs, and its expulsion was attended with a certain amount of relief. At first sight, this case seemed to warrant the fear that some chronic kidney affection was the cause of the symptoms, and I did not feel satisfied upon this head until I had enjoyed the opportunity of a careful examination of the urine. But it was not the only time that such doubts have entered my mind in investigating the symptomatology of worms. There is the strictest similitude between the cerebro-spinal symptoms of some forms of Bright's disease, especially of that form attended with the hard, contracted kidney, and those attendant upon worms, particularly the tape-worm. So close is this likeness, that in cases where I should have otherwise predicted the presence of worms, my mind has been suspended in doubt until after the urine had been subjected to scrutiny.

This point is too interesting, and offers too many valuable considerations for our notice, in speculating upon the conditions of these symptoms, to be passed over without a little further comment. What —looking at the observations which have been already adduced—may be fairly termed the phenomena of a representative case of vermination in the adult? They are about as follows:—A man, with a pale face, but fair *enbonpoint*, presents himself to his attendant, complaining of dull headache, not limited to any particular region of the cranium, but perhaps more marked in the frontal region than elsewhere. This headache does not offer any marked exacerbations or remissions, but is almost constant and sufficiently severe, without being excruciating, to render life, if not a burthen, at least unhappy. Giddiness is so severe that he often staggers about like one intoxicated; and when this symptom is present to a less degree, there is still almost continuously a sense of confusion and insecurity, which renders walking a serious effort. The ears are affected with a constant buzzing, and a great variety of noises, described sometimes as being like that produced by the boiling of a tea-kettle, sometimes like the letting off of steam from a boiler, not rarely like the rumbling of thunder. The acuteness of the sense of hearing is, at the same time, unimpaired.

lis vision is dull. Fine webs seem to be constantly before the eyes,) that every object wears a hazy aspect ; at other times, dark spots · brilliant flashes obstruct vision. Next to the headache and giddi- ss, it is the increasing imperfection of this sense which most alarms e patient. He finds that in seizing objects his hands are not so roughly under control as formerly. They and the arms are in a te of constant tremor ; and the legs are similarly, but to a less de- e affected. This symptom is sometimes so severe that he finds it icult to hold objects firmly, unless he concentrates his attention n his actions. He has a variety of unusual sensations about his y, all more or less referable to numbness. The stomach occasion- rejects its contents, and he is troubled with a general sense of siness about the abdomen, sometimes with a sharp colicky pain. ias, perhaps, lately suffered a severe convulsive seizure, or been ubject of a transient stupor. If the patient be a woman, violent rical crises have occurred, or genuine epileptic attacks. The s not merely pale ; there is an aspect of languor and heaviness, increased by a drooping of the upper lids in a severe case. Such abstract of the more common symptoms of worms, and I know) disease only which presents a similar combination of morbid and that disease is morbus Brightii. Fortunately the renal se- i is at hand to solve the difficulty and to exclude doubt.

similarity of symptoms engendered by causes apparently so e as toxœmia on the one hand, and intestinal irritation on the has led me to doubt the generally received opinion, that the phenomena of worms are connected with the mere results of rasites, as irritants of the intestinal tract. There is no eccen- sation known to us which produces like effects, and all analogy vour of the view that a generalized lesion of the nutritive as indicated by a morbid blood-plasma, is the real source of narkable pathological states. This view is confirmed by the that a profound lesion of the primary assimilating processes accompanies, and probably precedes, the generation and de- t of these worms. And in fact, it is difficult to explain their except on the supposition that a suitable nidus has been prepared in the shape of morbid secretions, wherein the fertilize. To these germs probably most persons, both in and uncivilized life, are pretty frequently exposed, yet a rity of mankind undoubtedly escape being infested by them. nant with all our knowledge of natural history to suppose who escape are in a physiological condition, have their se- a healthy state, and consequently offer no resting-place in ova of entozoa can become developed. Hence, too, the quency of these parasites among the ill-fed and half-fed our great towns, a fact which does not compel us to seek) in a greater exposure to the germs under such conditions. n very justly observes, that "generally speaking, these

worms prevail more especially in proportion as the patient is weak. We know that persons who are exhausted from fever will become the subject of vermin. In extreme debility of the constitution, a patient may be cleaned several times a day, and be covered with a fresh crop of vermin! So it is, in general, within. The more weakness there is of the body, the more the entozoa thrive. Bad air, bad food, and the want of sun, will contribute to their appearance. When rabbits are kept in a bad place, they become subject to hydatids; as do also sheep in wet pastures."

We find a further confirmation of these views in the circumstance that, though relief is speedy when the symptoms above related have been brought about by the presence of worms, it is by no means immediate, as it would be if a mere intestinal irritant were the sole condition of their existence. So far from being immediate, the relief consequent upon the expulsion of worms, in severe cases, is but slowly effected, even when we find no reason afterwards to suspect the presence of others in the body. This is very manifest in many of the cases, and deserves notice in a practical point of view, as it serves to demonstrate the necessity for careful dietetic observances, and judiciously applied medicinal agents for some period after the end in view has been apparently gained. Here, too, is the source of the frequent disappointment of patients, who begin to despair of cure when they observe a constant recurrence of the symptoms and of the parasites, in spite of powerful anthelmintics periodically administered. The palliative is the vermicide; the radical cure is to be found elsewhere, though medical doctrines lead to a reverse conclusion.

There are, confessedly, certain disorders engendered or maintained by worms, whose relief is strictly synchronous with their expulsion, whether effected by nature or art: such as hooping-cough, infantile convulsions; but these exceptions do in fact prove the rule. The nervous system in early life very quickly sympathizes with intestinal irritation, and a crisis occurs, such as is well calculated to draw the attention of the physician to the possible presence of worms, long before they have materially impaired the general nutritive functions. The species of worm present in most of these cases, too, is such as forbids the belief that a very marked interference with those functions is likely to occur. Ascarides in the great majority of these cases, and lumbrici in the rest, are the worms with which we have to deal. The former seem to infest the large intestine almost exclusively, and its extreme portion in most cases; while the lumbrici, though invading, by preference, the small intestine, do not offer, unless accumulated in great numbers, the enormous bulk so common in tænia, and are, therefore, less likely to interfere with the normal function of the part.

In reference to the aggravation of hooping-cough in certain states of the economy, Dr. Whitehead, in his third Report of the Manchester Clinical Hospital, says:—"By a similar kind of sympathetic irritability, the presence of worms in the intestines will aggravate the

ymptoms, or prolong the duration of hooping-cough almost indefi-
itely; in several instances in which the symptoms continued una-
ated unduly long, and where it was found that worms existed, the
pulsion of these parasites was immediately followed by mitigation of
e symptoms, and speedy cure."

It is, however, to be observed that these and similar symptoms are
quently to be noticed in tænia. Thus, Dr. Watson gives a case
m Bremser, "of a child eleven years of age, afflicted with tænia,
o had a troublesome dry cough. It was observed that her cough
suspended for two months, just after a very large portion of the
m had been brought away by anthelmintic medicines. This kind
incidence happened not once only, but three or four times; and,
ngth, when the whole of the worm had come away, the cough
permanently cured."

. Graves gives a case of a young lady who had fits of coughing
traordinary intensity; the cough was dry, loud, and hollow, and
ted every five or six seconds, night and day, when she was asleep
ll as when she was awake. In spite of this terrible agitation,
id not fall away proportionally. Every imaginable measure was
yed, but no relief followed. The case was "given up in de-
Some time afterwards Dr. Graves heard that she had been
all at once by that ubiquitous medical practitioner, "an old
," who had suggested a dose of turpentine and castor oil, for
rpose of relieving a sudden attack of colic; two or three hours
rds the young lady passed a large mass of tapeworm, and from
oment every symptom of pulmonary irritation disappeared.

hardly necessary to draw attention to the frequency with
'fits" of every variety are produced by worms. As I have
bserved, this is abundantly recognised so far as regards infan-
though certainly insufficiently in reference to the adult. It
kable that wherever convulsive seizures are mentioned in con-
ith worms, either by Willis or Heberden, lumbrici are alone
d. This can hardly spring from ignorance of the distinction
round and flat worms,—as it is undoubtedly as old as Hippo-
ut results, I believe, from observation of the superior liability
seizures in persons invaded by this species. Their peculiar
ion, and resistant head, are favourable for attacks upon the
e intestines—Von Siebold believing that they are able to
der its fibres; and their tendency to wander to the anus or
arynx is one of their characteristics. Küchenmeister ob-
; "if the worm be disquieted by any causes, it begins to
ut in the intestine which it inhabits, producing all kinds
s, which may even lead to death. According to the irrita-
ie individual, the number of the wanderers, the place to
have wandered, and lastly, according to the power of the
selves of asserting their vital activity, so varies the dan-
: these wanderers give rise." These causes of agitation are

internal and external. The former, seated in the worm itself, are, perhaps, as Küchenmeister suggests, only to be found in the sexual actions: it must not be forgotten that these are not, like tænia, hermaphrodite. The latter are in relation with the ingesta, some of which must be more or less repugnant to the parasite.

The singular frequency with which lumbrici are found in the bodies of those dead of tetanus has not yet obtained the attention it deserves. It is probable, too, that a more thorough examination of the intestines, in such cases, would reveal their presence still more often. My friend, Mr. West, of the Queen's Hospital, tells me that a young woman, aged 17, was admitted into that institution, under the late Dr. Fife, in the year 1855. She was anemic in appearance, and the catamenia were irregular. A peculiar "tonic convulsive condition" of the muscles of the right arm was noted on admission, which had resulted, as she stated, from a blow she had given to the thumb of the right hand while cleaning a pair of boots. She was believed at first to be suffering from hysteria, but she was seized with symptoms of trismus, and died in less than forty-eight hours. No appreciable lesion of the brain and spinal cord was discovered. All the thoracic and abdominal viscera were healthy. A lumbricus was found in the neighbourhood of the ilio-cæcal valve.

A deeply interesting case of a similar nature is reported by Mr. Johnson, of Bedford. A boy, aged eight years, was brought to the Bedford Infirmary on the 24th of July, with a lacerated wound above the right elbow, caused by the wheel of a cart passing over the arm. Sloughing took place, and, on the 30th, a large sore, four inches by two and a half, was exposed. The boy went on extremely well until the 8th of August; his general health improved, and the wound presented a most healthy appearance. On that day symptoms of trismus made their appearance, and he was ordered two grains of calomel three times a day. On the 10th, paroxysms of opisthotonos occurred every three or four hours. On the 13th the gums had become slightly affected, and the paroxysms were not quite so violent. On the 15th he passed four lumbrici, five inches in length. From this time until the date of his death (August 25th), the paroxysms appeared to diminish very much in severity and frequency; but the length of time that these symptoms had lasted, viz., thirty-two days, had rendered him so weak and emaciated, that he died exhausted. The mucous lining of the upper part of the small intestine was found much inflamed, and in the upper part of the jejunum three masses of lumbrici were discovered, numbering thirty-six. Mr. Johnson believed that there was an intimate relationship between the tetanus and the presence of the lumbrici—a belief which appears to be justly based on the facts of the case.

Last summer a boy, about fourteen years of age, was admitted into the Queen's Hospital, under my care, labouring under the most violent tetanus. He had been affected by these symptoms about two

days. There was an obscure history of an injury, as usual, but nothing could be found about the body to justify the statements made. A few hours after admission he died. The examination of the body was seemed very inconclusive. Softening of a small portion of the dorsal ord was observed; but there was some ground for the suspicion that ne injuries accidentally occurring during the necropsy might account r this. Lumbrici were found in the intestinal canal.

It is within the limits of fair speculation to suppose that in these ses, and others of a like character, the tetanic phenomena were ex- ed by the lumbricus in persons who already were in a condition ourable to the development of such phenomena, but who might 'e escaped had the worm not been present. The case reported by . Johnson especially warrants this opinion.

fany of my own cases tell a history of fits in connexion with ms,—often the most violent hysterical crises were observed. nine epileptic seizures were also several times observed.

have felt much hesitation in giving a name to some of the seizures uced by worms. If "excentric eclampsia" would appear the *g term* for some of the cases, especially those occurring in early ind, for the most part, caused by lumbrici or ascarides, it would inapplicable to many others, which rather deserve the appella- f toxœmic eclampsia, and are assimilated to the well-known us lesions of Bright's disease, as before mentioned. But it is important to agree upon the precise nosological phrase where- o characterize these conditions as to thoroughly appreciate the) and often mixed character of these paroxysms. Intense a, with the most violent jactitations, or, on the other hand, ed with an imperfectly developed cataleptic state and profound sudden insensibility without convulsion, every variety of con- seizure attended with insensibility; or tonic spastic states, ; unconsciousness, may constitute the particular expression of sympathy, and yet acknowledge but one origin.

authors omit to place worms among the causes of chorea, t they are not named by Heberden in this relation, and g gives but little countenance to the doctrine. He states) disease can scarcely be shown to be produced by irritation. irritation most frequently resides in the intestines and rgans; but under this head a more important part has been o helminthiasis than it is found to merit on closer examina- Notwithstanding, this author gives one illustrative case. A six years, in whose fæces the mother not unfrequently traces of ascarides, rapidly recovered under the employment l and jalap powders, which brought away a large quantity uris vermicularis. I arrived at the same conclusion with ome time ago, from observing the infrequency of worms in r of chorea. This disorder, indeed, seems to belong to the neuroses, and to acknowledge but rarely intestinal or other

irritation for its cause. The subject of the nineteenth case was suffering from chorea, and had passed pieces of flat-worm. But here there was a marked systolic bruit. In such a case the rheumatic diathesis, or, in others, an extreme nervous mobility, may be the predisposing condition, while the presence of worms, or a fright, may be the immediate excitant.

Krause is quoted as having seen a case of a young man, of robust constitution, aged 31, who had been attacked for many years with paroxysms of involuntary laughter. At every accession he experienced a malaise, which was relieved only by lying down flat on his belly. None of his previous advisers had questioned the patient about worms, which he admitted having passed some years before. The administration of efficient vermifuges immediately relieved him of all his disagreeable symptoms. Another young man, mentioned by Girandy, presented some very singular symptoms, one of which was that he found it impossible to walk over any substance, however small, even a sheet of paper. Every time he endeavoured to conquer this difficulty he fell into a state of syncope. Vermifuges effected the evacuation of many worms, and a cure resulted. A case is quoted from Mœnnich, of a child between two and three years old, previously robust, who was suddenly attacked with paralysis of the lower extremities, strabismus, and distortion of the features. After the administration of vermifuges he passed eighteen ascarides, with a great quantity of glairy matter, and his health was re-established.

Küchenmeister quotes from Seeger a valuable table of the comparative frequency of particular symptoms, from a statistical table of 100 patients with tape-worm, which yields a widely different result from that arrived at by Louis; and far nearer, though still with important differences, that which my own experience would warrant. "Sixty-eight times there were cerebro-spinal affections, and partial or general convulsions (for example, epilepsy, hysteria, melancholy, hypochondriasis, abdominal spasms, dyspnœa, and convulsive coughing), which may even rise to maniacal attacks, and mental weakness; forty-nine times, nausea, even with vomiting and fainting; forty-two times, various pains in the abdomen; thirty-three times, disordered digestion and irregular evacuations; thirty-one times, irregular appetite and voracity; nineteen times, periodical, habitual headache, usually on one side; seventeen times, sudden colic; sixteen times, undulatory movements in the abdomen, up to the chest; fifteen times, dizziness or delusions in the senses, and defects in the speech; and eleven times, shifting pains in various parts of the body." Küchenmeister refuses to ascribe these symptoms to the worm; and his reason is, that even when it has been expelled, they do not disappear. He also quotes, half-approvingly, the Abyssinian belief, that tape-worm only thrives in a healthy intestine. I have already observed that the expulsion of the tape-worm may not take away the verminous malady; and that the vermicide must be held as preliminary only to a course.

of measures directed against the condition which maintains the existence of the parasite. Such arguments, therefore, as those of Küchenmeister must be held as inconclusive.

Dr. Wood, of Philadelphia, has given an excellent description of the symptoms produced by each variety of intestinal worm, and more thoroughly appreciates the serious nature and frequency of the nervous symptoms than any recent author with whom I am acquainted. He, like M. Grisolle, quotes the results arrived at by M. Wawruch, of Vienna, and which are too valuable to be passed over. During a period of twenty years the professor had seen 206 cases of tape-worm — a number sufficiently numerous to warrant positive results. The following is his summary of the symptoms:—Dull pain in the forehead, dizziness, buzzing in the ears; dulness of the eyes, which are surrounded by a dark circle; œdematous eyelids, dilated pupils, frequent spasmodic movements of the eyes; alternate paleness and flushing of the face, paleness of the lips, peculiar movements of the nose and mouth; emaciation, alternate loss and excess of appetite, cravings for particular articles of food; offensive breath, furred tongue, spitting or vomiting of thin mucus in the mornings; itching at the nose, anus, and vulva; grinding of the teeth, especially during sleep; contraction of the throat, swelling of the belly, gurgling, shooting pains, a sense of pinching about the umbilicus; a feeling in the morning as of a foreign body moving in the bowels; amelioration of all the symptoms under the use of farinaceous food, hot bread, and coffee; irritability, depression of spirits, and a train of nervous derangements in many selected cases. "Sometimes," adds Dr. Wood, "the nervous disturbance amounts to convulsive movements of an epileptiform or hysterical character; and when these occur in a man with signs of anal disorder, the possible existence of the worm should be sus-"

The latter remark well deserves to be kept in recollection by the student. In a case presenting the symptoms alluded to, in absence of the signs of any special brain disorder, the existence of these few ill-defined disturbances in the digestive functions should excite suspicion and inquiries relative to the existence of worms.

I will, in conclusion, place before the reader, in a summary manner, the conclusions at which I have arrived, and which appear to me to be drawn from my cases.

1st, In the great majority of cases of tape-worm, and, though in greater frequency, in cases of other intestinal worms, more or less marked and peculiar nervous disturbances are apt to arise.

2d, The most frequent of these are headache, giddiness, various affections of the special senses, especially singing in the ears, flashes or spots before the eyes, imperfect amaurosis, and trembling of

various anæsthetic, and, on the contrary, neuralgic phenomena very frequent, usually connected with general lassitude and muscular feebleness.

4. That, though less frequent than those previously cited, convulsive seizures, partaking of the nature of epilepsy or acute eclampsia, or sudden attacks of insensibility, mixed with syncope, and, in the female sex, severe forms of hysteria, are also often directly traceable to worms.

5. That the last symptoms (No 4) are more common in childhood, and the earlier periods of life, than afterwards; and are more frequently caused by the round and thread-worm than by the tapeworm.

6. That chorea does not appear to be often excited by the irritation of worms.

7. That a feeble state of the general health generally accompanies the presence of worms; often, in cases of tænia, proceeding to marked anemia, so as even to lead to the suspicion of the possible existence of Bright's disease.

8. That the irritation phenomena of the digestive tube, even when associated with various symptoms referred to the functions of that tract, do not warrant the diagnosis of the presence of tænia; and that their absence does not absolutely indicate the absence of the parasite.

9. That the frequent appearance of the nervous symptoms above related, without a well-marked relation to any special lesion of the nervous system, especially if alternating with periods of perfect or nearly perfect freedom, should engender the suspicion that worms are present. If to those symptoms are added various ill-defined disturbances of the functions of assimilation, including occasional colicky pains, without marked vomiting, pain after food, or decided emaciation,—it is in the highest degree probable that worms are the source of the symptoms, and steps should be taken to obtain assurance of their existence, or the contrary.

10. That it is probable that many of the sympathetic phenomena of vermination are connected, not with their direct irritation of the mucous membrane, with which they are in relation, but with a general disorder of the system, partly resulting from the parasites, and partly the cause of their maintenance and development in the intestinal tract.—*Dublin Quarterly Journal, Aug.*, 1859, *p.* 133.

31.—*Tapeworm induced by eating Raw Bacon.*—Recent investigations have done much to elucidate the hitherto mysterious question as to how certain parasites find their way into the human organism. Respecting the common tapeworm or tænia solium we now know for certain that its scolex, or immature form, is the cysticercus cellulosæ, and that the latter abounds in pork. We know, further, as a fact in the social history of different nations that this kind of tapeworm is found in almost exactly proportionate frequency to the use of pork as an article of diet. Wherever, as in Poland, Hungary, and our

own country, the breeding of pigs flourishes, there the tænia solium abounds; and *vice versâ*, wherever, as in Iceland, there are very few pigs, there it is almost unknown. A sound physio-pathological reason may be given for the religious ordinance of circumcision among the Jews; and here we seem to have a parallel one offered for the prohibition of the flesh of swine. It is asserted by Küchenmeister that this worm "is almost entirely unknown among those Jews and Mohammedans who live strictly according to their religious precepts, and who are not deprived of the opportunity of procuring their meat from 'clean' butchers' shops in which pork is never sold."—*Med. Times and Gazette, May* 28, 1859, *p.* 550.

32.—HEPATITIS TREATED BY CHLOROFORM.

By Dr. KIDD, Physician to the Metropolitan Dispensary.

In a case of acute liver disease, which came under the notice of Kidd, of the Metropolitan Dispensary, within the last month, action of chloroform exhibited internally was quite magical. The ient, a delicate female, had been suffering for some days under t was described and believed to be acute inflammation of the with obstruction of the gall ducts; for this antiphlogistic sures were had recourse to with little or no avail; the tenderness the liver as of hepatitis, was excessive, still the jaundiced colour ie skin was unaltered. On seeing the patient with this history, Kidd, on carefully watching the nature of the pain (though in thing else it simulated the pain of inflammation of the peritoneal ings of the liver itself), yet he detected that the pain had ed remissions. "Oh, I feel the pain coming if you touch me," atient cried out more than once; the least touch, or examina- f the part, in fact, brought it on, nor did it seem to be limited to the hepatic region, but to the entire of the right side below ipple. "No hepatitis here," said Dr. Kidd, "but possibly gall and hysteria," and so it proved to be; the patient had been -four hours in high fever and constant agony. Venesection, *quium*, calomel, to the saturation of the system, such as would Mr. Ranald Martin or his school. leeches and cupping, all hazily in the distance; the case, in a word, was very similar of Mr. Augustus Stafford, who, Dr. Snow in his book says, ave been rescued from death by a drachm of chloroform. The nt on doubt, in both cases would depend on a correct diagnosis. lison and Mr. Skey are in the habit of remarking, where in ations of the peritoneum or elsewhere, you have very excessive ss on pressure take care that it is inflammation at all. The is a good one, and convinced by it, Dr. Kidd having rubbed ns of calomel to the patient's tongue, commenced the treat- h ten drops of chloroform internally every half hour till the

pain seemed to alter. The effect was magical; the pain subsided after three doses, allowing a free examination of the parts and free fomentations with hot flannel; the bowels, which had not been open for some time previously, were soon after acted on; the menstrual function, which had been delayed ten days beyond its time, and was beginning to cause some alarm, returned also quite naturally.

Two days subsequently when the medicine was altered the pain again returned, but yielded again to the chloroform and the application of four leeches over the site of the gall ducts. The patient after this recovered perfectly.

The rationale of the treatment in such cases as this is to be found in the fact, that chloroform has a decided or specific action on muscular tissues and semi-muscular canals like the urethra or gall ducts. Dr. Gull, of Guy's Hospital, has also published cases of gall stones, where chloroform gave very manifest relief, and Dr. Snow, as already stated, refers to the well known case of Mr. Stafford, where chloroform unfortunately in a miserable village could not be procured, though the physician in attendance sent for some. Opium in overpowering doses having been then administered and large bleeding tried the patient was lost.—*Medical Circular, July* 13, 1859, *p.* 20.

33.—ON JAUNDICE.

By Dr. STEPHEN H. WARD, Physician to the Seamen's Hospital "Dreadnought," &c.

[The author, after citing cases of jaundice from different functional and structural derangements of the liver, observes]

I cannot but allude with some satisfaction to the light which morbid action is ever throwing upon healthy function. Chemists are still undecided as to the exact composition and uses of bile; but the phenomena of disease, in cases such as I have narrated, have given us nearly all the insight we possess into the real purposes of the liver. From the comparative torpor of the brain, and the effort with which it performs its functions in some cases, and the more serious cerebral symptoms in others, where there is no secretion of bile by its usual channel, and imperfect elimination, perhaps, by the kidneys, we learn that this fluid contains materials, the separation of which from the blood is essential to health. And analyzing the cases a little more closely, we find that the evil day of cerebral implication more immediately impends where the actual secretion is arrested than in those in which the fluid has been separated from the blood, but has been prevented by obstruction in the ducts from passing off in its usual course. The anæmia, passive hemorrhages, &c., which ensue when the secretion of bile has been interfered with for any length of time, show the effect upon the blood itself. One symptom seems to result from the absence of bile, for any lengthened period, from the intestine,

ad that is emaciation, or, at any rate, non-renewal of adipose tissue.
; confirms the views of chemists, that bile contains a soapy kind of
aterial, which effects the solution and consequent absorption of the
ty portions of the chyme. Recent experiments would seem to show
at the pancreatic juice is adequate to the solution of fatty matters;
t my own observation of the consequences which ensue where the
) is absent, leads to the conclusion stated. The constipation which
ends the deficiency or absence of bile, and the diarrhœa consequent
n its excess, prove that the purpose of part of its ingredients is to
mulate the peristaltic action of the bowels, and promote the removal
rement. Further, the offensive character of evacuations devoid
le points conclusively to its antiseptic properties.
conclusion, I have one or two observations to make in reference
ie treatment of jaundice. There is one principle to be borne
ily in mind in all cases, whatever their cause, and that is to pro-
in every way the functions of those organs by which compensa-
limination of bile is effected. To carry out this principle, we
avail ourselves of warm and vapour baths, saline purgatives, and
arious kinds of diuretics. In case 5, I exemplified the fatal
which followed suspension of the function of the kidneys
h the action of a blister. Acting upon the experience derived
he case in question, I would advise, under similar circumstances,
course should be had to some other form of counter-irritation
listering—such as strong liquor of ammonia, mustard plaster,
he strong blistering fluid, which produces vesication quickly,
ie less likely to be absorbed into the blood.
undice from acute congestion of the liver, leeches, cupping
with or without the scarificator,) fomentations, &c., over the
f the liver, and saline purgatives to unload the engorged portal
are the curative measures most likely to be followed by relief.
he congestion is primary, due to spirit-drinking, and such as
n to inflammation of the adhesive character, mercury pushed
specific action, and followed by iodide of potassium, would
the cases cited, to be indicated. In cases of closure of duct,
an do no good; here we can only carry out the principle of
n by other channels. In jaundice from suppression of bile
it upon mental or moral causes, the treatment consists in
e doses of mercury, saline purgatives, diuretics, warm or
ths, and, above all, in removal of the exciting or sustaining
Then bile once appears in due quantity in the alvine evacu-
must not go on pushing our remedies simply because the
nes jaundiced; for, as Dr. Budd, who lays great stress upon
of practice, observes, some time must elapse before the skin
its normal colour.
ings of cerebral implication are to be met by drastic purg-
-irritation to the nape of the neck and calves of the legs,
ion on the kidneys: and, as we have seen, may frequently
essfully.—*Lancet, July* 16, 1859, *p.* 54.

34.—CASE OF ANÆMIA LYMPHATICA, A NEW DISEASE CHARACTERIZED BY ENLARGEMENT OF THE LYMPHATIC GLANDS AND SPLEEN.

(Under the care of Dr. PAVY, Guy's Hospital.)

Much interest was excited amongst the profession by the announcement of Dr. Wilks, at one of the meetings of the Pathological Society during the past session, that the morbid specimens which he exhibited were taken from a patient in Guy's Hospital, whose disease was new, and hitherto unnamed. The essential features of the disease are the most extreme pallor of anæmia, enlargement of one or more of the various groups of lymphatic glands, either internal or external to the body, and a peculiar morbid condition, with occasional enlargement, of the spleen; the last depending upon the deposition of an opaque, white, lardaceous material, in isolated masses, or diffused throughout the substance of the organ, and resembling bacon-rind. The malady is so striking, and yet so peculiar, that when carefully studied it is almost impossible to mistake its identity. Six cases are detailed in the second volume (third series) of Guy's Hospital Reports, in a paper by Dr. Wilks, "On Cases of Lardaceous Disease and some Allied Affections." All of them proved fatal, as well as those which have since come under our notice. The peculiarities noticeable in these cases were as follows:—

Case 40.—Enlargement of the lumbar and posterior mediastinal lymphatic glands, forming a chain of tumours along the whole length of the spine upon each side of the aorta; spleen enlarged, opaque white deposits through it; age 24.

Case 41.—Lumbar glands much enlarged, and accompanying the aorta along the spine to the pelvis: mesenteric and bronchial glands enlarged; spleen large, with a number of ovoid white bodies; age 9 years.

Case 42.—Cervical, mediastinal, bronchial, and lumbar glands enlarged; spleen four times larger than natural, three-fourths of it resembling opaque white tallow; age 10 years.

Case 43.—Lymphatic glands of neck, groin, and around the great vessels in the chest and abdomen, enlarged; spleen had a few white tubercles: age 16 years.

Case 44.—Great enlargement of the absorbent glands of the neck, axilla, and groin; spleen enlarged, and an infinite number of small, white, opaque deposits; age 50.

Case 45.—(Dr. Markham, 4th vol. Transactions of the Pathological Society.)—Enlargement of anterior and posterior mediastinal glands, encircling the arch of the aorta; spleen enlarged, with small white masses throughout; age 30.

Some other instances might be added to these; but it will be sufficient to append the following, shown to the Pathological Society in the course of its last session:—

"Enlargement of the cervical, mediastinal, and lumbar glands; the spleen much enlarged, with white deposits throughout; age 22."

The enlargement of the lymphatic glands, which thus seems the peculiar feature of this malady, is remarkable for the lingering form of fatal cachexia which it produces. The extreme pallor of the patient —as we have witnessed at this hospital—at once attracts the attention of the observer.

In relation to the six cases we have briefly noticed, Dr. Wilks observes, in regard to the symptoms during life and the appearances after death—"Their uniformity is too considerable to constitute merely a coincidence of disease between the glands and the spleen, and therefore there is, without doubt, a peculiar form of affection involving these organs, accompanied by an anæmic cachexia, prostration, and death. I say a peculiar affection: for though allied to the tubercular, I believe it to be one not yet recognized under the ordinary forms of disease."

This affection has been mistaken for scrofula, especially where the glands in the neck of weakly children have commenced to enlarge. It occurs to persons of all ages. It may gradually extend over a period of two or more years, when the thoracic and abdominal glands become involved, and slow prostration precedes death.

The intimate structure of the enlarged glands is a fibro-nucleated tissue, and this is not to be distinguished from ordinary fibro-plastic growth. Dr. Hodgkin described a case of this kind in the seventeenth volume of the Medico-Chirurgical Transactions, in which he refers to its connexion with a peculiar affection of the spleen; but he affixed no name to it. Dr. Wilks correctly styles it *anæmia lymphatica*, which is a very distinctive appellation, the anæmia being the most important result, and tending to the fatal issue. Moreover, it is a simple and good name for it, as he thinks it indicates the most important condition of the malady, and the one often only recognizable when the enlargement of the glands is entirely within. There is no excess of white corpuscles in this disease similar to that observed in the *leucocythæmia splenica* of Bennett, but rather a deficiency of the red, as was observed in the following case, for the notes of which we are indebted to Mr. Hugh Bennett, clinical clerk to the hospital. In this instance, the duration of the disease was three years and a half, and the extreme whiteness of the skin resembled the anæmia of females who have lost much blood. The anæmic bruit was also present.

William B., aged 27 years, was admitted, on June the 8th last, into Job ward. He was a single man, by occupation a gunmaker, and residing in Fleet-street; states that his health had been good up to three years and a half ago, excepting having had an attack of inflammation of the bowels fifteen years since, and three attacks of gonorrhœa four years ago; he had a chancre on penis, no sore throat, no bubo, nor eruption; six months afterwards had enlarged glands in the left

groin, which have increased in size ever since; he was never of dissipated habits, and always kept good hours. His parents and brothers are healthy; no history of scrofula in the family. Three years and a half ago, he noticed a small lump in the left groin, accompanied with a slight pain. It was the pain, and not the lump which chiefly attracted his attention. The pain he described as dull and aching, descending the left thigh as low down as the knee, the thigh being at the same time slightly swollen, and also ascending obliquely backwards towards the small of his back. Twelve months ago he was an inmate of St. George's Hospital, under the care of Mr. Hawkins, who treated him with iodide of potassium and cod-liver oil internally, and tincture of iodine locally. He was presented by Mr. Hawkins, at the expiration of eight months, slightly relieved. He resumed his original occupation, and followed it for a short time, until he became so weak that he was compelled to give it up.

The patient is a man of middle stature, light complexion, grey eyes, and light hair; presenting all the appearances of having lost an abundance of blood—suffice it to say, however, that he has not lost any; skin of his body generally extremely white, hot, and pungent; conjunctivæ watery. Chest well formed, mobile during respiration, and resonant on percussion; equally resonant posteriorly. Lungs healthy. On listening to the sounds of the heart, there could be heard indistinctly a systolic bruit in the course of the aorta, ("anæmic bruit diagnosed.") He never had rheumatism or pain in his limbs. His voice is strong and clear; tongue moist and clean; has evidently an enlarged spleen, bulging out of the left hypochondriac region; it can be distinctly felt through the abdominal walls; has enlarged glands in the left groin, about the size of a goose's egg; no other glands perceptibly enlarged; has general anasarca; skin pits on pressure in every part of the body and extremities; urine healthy, specific gravity 1017; bowels open; motions of a clay colour, "pale."

Mr. Stocker, the apothecary, saw the patient on the 8th of June, and ordered the following medicine: two grains of iodide of potassium, in an ounce of julep of ammonia, three times a day.

June 9th. He had a good night. His blood was examined microscopically this morning, and was found to contain an excess of white corpuscles, "comparatively speaking;" but, in reality, there seemed to be a deficiency of the red corpuscles, rather than an excess of the white.

11th. Dr. Pavy prescribed five grains of the citrate of iron, with quinine, thrice a day.

13th. Has a severe headache this morning, and a troublesome cough is coming on, without any expectoration. To have five grains of extract of conium night and morning; also, five ounces of wine daily.

16th. Feels better since he has had the wine; cough much about the same. Ordered, lactate of iron, five grains; iodide of potassium,

o grains; syrup of poppies, half a drachm; water, an ounce: three nes a day.

18th. Expresses himself as being better; lower extremities still very ematous; coughs a good deal at night.

July 4th. Thirst excessive; appetite lost; expectoration more ndant, of a bluish grey, slightly frothy character, and strongly erent to the bottom of the utensil.

th. The patient evidently seems much worse; lies prostrate in bed; ot able to sit up for five minutes together; mouth and tongue very the latter being brown in the centre, and white along the margin.

h. Had a very restless night; respiration became hurried; pulse k and feeble; eyes turned upwards; mouth wide open, and dry. red, eight ounces of wine; ammonia and serpentaria.

th. Unconscious; lies on his back, with his head thrown back- s; pulse rapid, and extremely feeble.

th. Expired at six, a.m. Died quietly.

st-mortem examination thirty-three hours afterwards.—On ng the thoracic cavity, it was found to contain a larger quantity d than is usually met with in health, and an excess of fluid was und in the pericardium. Lungs free from adhesions; patches ening were here and there found on cutting into them. Liver, s, and heart, healthy; the latter contained no clot, except a all one in the left ventricle; blood being remarkably thin, like ne and water mixed. Spleen enlarged; weighed twenty-four and a half; full of white tubercles. Lumbar glands greatly d; inguinal glands also enlarged.—*Lancet, August* 27, 1859,

DISEASES OF THE URINARY ORGANS.

ON EXCESS OR DEFICIENCY OF UREA IN THE URINE.

LIONEL BEALE, F.R.S., Physician to King's College Hospital.

specimen of urine is said to contain excess of urea, it is un- that on adding an equal bulk of nitric acid to it, when trated, a nitrate of urea forms, and crystallizes just as if the been concentrated by evaporation.]

esult may be brought about in several ways. In cases in a small quantity of fluid is taken in proportion to the urea oved—when an unusually large amount of water escapes by nd other emunctories—and in cases in which an unusual urea is formed in the organism, we shall frequently find rea.

There is another class of cases in which the urine often contains this excess of urea; and it is difficult to offer a satisfactory explanation of the excess. The patient is weak, and grows thin, in spite of taking a considerable quantity of the most nutritious food. He feels languid, and indisposed to take active exercise. In some cases, digestion is impaired; in others, the patient eats well, experiences no pain or uneasiness after food, and perhaps has a good appetite. Sometimes there is lumbar pain. It would seem that much of the albuminous substances in the blood, instead of being applied to the nutrition of the tissues, becomes too rapidly converted into urea, and is excreted. The waste of the tissues is not properly repaired, and the patient gets very thin. To refer these symptoms to the existence of a particular diathesis, appears to me no explanation of the nature of the case. The pathology of these remarkable cases has not yet been satisfactorily investigated. Mineral acids, rest, shower-baths, and good air, often do good; but some of these patients are not in the least benefited by remedies, and they continue for years very thin, passing large quantities of highly concentrated urine, while the appetite remains good, and they digest a considerable quantity of nitrogenous foods. I am now trying, in one of these cases, which has resisted the usual plans of treatment, the effect of pepsine, with diminished quantity of meat, and a larger amount of farinaceous food. The condition often lasts for some years, and then the patient's health improves, and he gets quite well.

Dr. Golding Bird has drawn attention to the frequency of the occurrence of excess of urea with oxalate of lime. The quantity of oxalate of lime, however, is in all cases so very small that it is hardly possible to believe that the formation of this substance can be very important. We shall see that oxalate is one of the commonest urinary deposits; that it results from decomposition; that there is no reason for believing it to be indicative of any peculiar diathesis or habit of body. Excess of urea affords no explanation of the presence of oxalate of lime, nor this latter of urea. Each condition may exist without the other. *Cæteris paribus*, we should expect to find oxalate of lime most frequently present in specimens of highly concentrated urine.

Excess of urea is frequently found in the urine of persons suffering from acute febrile attacks. It is very common in cases of acute rheumatism, and is often met with in pneumonia and acute febrile conditions generally. In England, we meet with many of these cases; but, on the continent, they appear to be so rare that many authorities seem to doubt the truth of what English observers have stated with regard to this point. Lehmann, I think, states that he had not seen a case in which crystals of nitrate of urea were thrown down upon the addition of nitric acid, without previous concentration.

The amount of urea excreted is often very great. Vogel mentions a case of pyæmia in which 1235 grains of urea were removed in the

ıse of twenty-four hours. Dr. Parkes obtained as much as 885 ins in a case of typhoid fever. These quantities are very great, if *patients* were of the average weight of adult men ; but, unfortuely, their weight was not recorded.

Jrine containing excess of urea is generally perfectly clear, of er a dark yellow colour, and of a strong urinous smell. Its specific ity is about 1030, and it contains generally 50 or 60 grains, or , of solid matter per 1000. At ordinary temperatures, an aqueous ion must contain at least 60 grains of urea per 1000, to form als of the nitrate upon the addition of nitric acid without pre- evaporation ; 50 grains of urea per 1000 hardly gave the est precipitate after the lapse of a considerable time. It would that the salts, extractive matters, &c., in urine, cause the crystion of the nitrate when even a smaller quantity of urea is pre- It should be mentioned, that the above experiments were per- d in the summer, in very hot weather. In one case, in which ea readily crystallised on the addition of nitric acid, the urine specific gravity of 1028, and contained—

Analysis.

Water	940·18
Solid Matter	59·82
Organic Matter	50·57
Fixed Salts	9·25

ı has already been said with regard to the circumstances which diminished quantity of urea in health. I may remark here, . *E.* Smith holds that tea and coffee excite respiration and inhe quantity of carbonic acid ; that tea increases waste, and every function in the body ; and that it is, therefore, injurious *who* are not well fed. These conclusions are at variance e results of the laborious investigations of Dr. Böcker, who: ıat tea caused a diminution in the quantity of perspiration, l the fæces. He states that it does not influence the amount ıic acid formed, nor the frequency of the pulse or respiration ; , when the diet was insufficient, tea prevented the loss of ɔing so great as it would have been otherwise.

onic disease of the kidney, the urine is of very low specific *nd* but a very small proportion of urea is excreted in the ur hours. This arises from the alteration in the gland- and the amount of urea separated may be regarded as a *ication* of the extent of the organ involved. In some cases, d condition affects the whole structure ; but in others the ırt of the kidney remains healthy. In the latter case, a fair f urea will be excreted ; and, although the urine contains the case may be looked upon as a hopeful one.—*British nal, Oct.* 8, 1859, *p.* 809.

36.—CASES OF DIABETES.

By Dr. JOHN M. CAMPLIN, F.L.S.

[Before perusing the following cases, it would be better to refer to Dr. Camplin's description of the bran bread which he recommends, vol. xxxv., p. 425. *Case* 1.—August 1858. Mrs. ——, aged 44, the mother of several children, rather a large woman, supposes that her complaint has been brought on by anxiety—sweats profusely; much debility. Sp. gr. of urine 1·040, liq. potassæ turning the sample to a claret colour. Almost eight pints were passed in twenty-four hours.]

When I first saw her, the diabetic symptoms were rather aggravated than otherwise, the liq. potassæ rendering the urine extremely dark.

I prescribed

℞. Acid. sulph. dilut. ʒiij.; liq. gent. compos. ʒiiss. M. cap. coch. parv. ter die ex aquæ cyatho.

℞. Aloes. barb. ext. Saponis ää xxiv.; pulv. ipecac. gr. iv.; ext. nucis vom. gr. iij. M. et div. in pil. xij. cap. j. vel plures h. s. ut opus f.; and enjoined a diet, of bran, cake, meat, and a free use of vegetables.

Aug. 31. Urine diminished to four pints, and now only brown, with liq. potass.; thirst nearly gone, and in every respect better.

Sept. 15. The sample of urine sent up for inspection contained scarcely a trace of sugar; the sp. gr. 1·015 (quantity not mentioned;) and it was difficult to believe that it could be from the same person.

Nov. 1. I received a note, stating that she had quite recovered; and on April 19 of this year her husband writes: "I am happy to say that Mrs. —— is now quite well; she has resumed her usual diet long since."

Case 2.—Dec. 1856. ——, Esq., upwards of 70, attributes his attack to late hours in Parliament, which had been "too much for him at his advanced time of life."

The general health of this patient was not so much lowered as might have been expected, the disease having existed for some months; but his son (an eminent surgeon) considered him now fast declining; he complained much of weakness of the limbs, and had a little puffiness on the tibia; had taken gallic acid and other remedies by the advice of his medical attendant in the country, and had also been put on a partially restricted diet; the quantity of urine was now about 80 oz., the sp. gr. not much above 1·030, but it contained a considerable quantity of sugar.

I prescribed

℞. Ammon. sesquicarb. ℈ij.; infus. aur. co. ʒviii.; m.f. cap. coch. ij. ter die; and directed a more rigid diet, with a little brandy and water instead of wine.

This prescription was occasionally varied, with ammonia as the

general basis, and he took from time to time, small doses of pil. hydr. and pulv. ipecac. compos. and gradually recovered.

Aug. 5, 1857. He writes, "I am glad to be able to say that for some months past I have been in excellent health, and my friends tell me I look as well as I ever did."

July 21, 1858. I had a note from his son, who says: "He has utterly been well in health, and when I last examined the urine, no sugar could be detected, but there was a large amount of lithates. He *lives* pretty much as usual, temperately always as regards alcoholic liquors, but does not eat much bread—the bran cake his servants managed very well, and he takes it occasionally: he has lately suffered the operation of reclination on a cataract in his right eye, and the result I am thankful to say seems likely to be satisfactory."

In a recent occasion, when I accidentally met this gentleman, I had the satisfaction of hearing that my patient, though in 78th year feeble, had not required any restriction in diet for eighteen months before.

Case 3.—The Rev. Mr. ——, nearly 64. Sept. 1857.—The history of this case written by himself is exceedingly graphic; and only the fear of occupying too much of your valuable space prevents me from transcribing it at length. The disease had been slowly undermining the system several months, and having been in the habit for some years of resorting to a hydropathic establishment when out of health, he had recourse to that in the first instance. Contrary to what had been usual with him, instead of recovering strength, he continued to weaker, and the nature of his disease not being ascertained, the proprietor considered him nervous, and recommended him to go to the sea. After remaining there for some weeks, still losing ground, he came to consult an eminent physician in town, who discovered the nature of his case, prescribed for him, and put him on a partially nitrogenized diet. When he placed himself under my care, he was somewhat better, but highly nervous and dyspeptic, the urine still abnormal in quantity, and containing sugar. I advised that the diet should be further restricted—that he should have weak brandy and water instead of claret. Substituted ext. humuli at night for the opiate, as he was too wakeful to do without anything, and prescribed the following mixture:

℞ Magnes. carbon. ʒiv.; pulv. acaciæ ʒij.; sp. ammon. arom. ʒij.; infus. gent. compos. ad ℥viii. m. f. mist.

This prescription occasionally varied, as Dec. 16.

℞ Potass. bicarbon. ʒiij. ʒj.; magnes. carbon. ʒiv.; pulv. acaciæ ʒij.; tinct. hyoscy. ʒi.: infus. calumbæ, ad ℥viii. m. f. mist. Capiat. coch. ij. ter die.

Before time small doses of tinct. nucis vom. were ordered to the mixture, but soon laid aside again; he gradually recovered and resumed his clerical duties, which he had long been incapable of doing.

June, 1858. He writes:—"I am now gradually returning to ordinary diet. I substitute brown bread for the bran cake. I have now more fear of lithic acid, than of sugar."

March 23, 1859. "I have no return of diabetes, and am decidedly stouter, and more vigorous Now take three glasses of port-wine daily, two at dinner, one mulled at night, or at 8 o'clock in the evening; brown bread and greens, meat three times a-day, but not much."

Case 4.—August, 1858. —— Esq., banker, aged upwards of 60, consulted Dr. Babington, who prescribed for him, and kindly recommended him to me for instructions as to diet. Dr. Babington's prescription was five grains of ammon. sesq. in infus. gent. c. three times a-day. Writing to me shortly after, this patient says:—"It is quite astonishing how little water I part with in comparison—it was immediate when I paid strict attention to diet."

I had not heard of this gentleman for many months—in answer to an inquiry as to his state, he writes, (April 23, 1859:)—"I do not make more than one quart per day; sometimes there is a little red sediment at the bottom. I sleep well, and eat well."

The above are specimens of a few cases, in which a return to the ordinary diet has been practicable: in the majority the disposition to the formation of sugar has appeared too strong to render this advisable: and I have thought it better for the patient to be satisfied with comparative health and comfort, with the diabetic diet, than to run the risk of a relapse, particularly where, from the distance and other circumstances, I could not examine the urine from time to time.

The remedies prescribed in the above cases were in the first acid, in the others alkaline, in each the indications seemed obvious, and the result was most satisfactory. In cases now under my care (especially five or six from 30 to 35 years of age,) I am testing the value of various remedies, and hope by classifying them, as much as practicable, to obtain definite results.—*Med. Times and Gazette, May* 28, 1859, *p.* 547.

37.—CHRONIC DIURESIS IN A MAN AGED FORTY; EMPLOYMENT OF BELLADONNA.

(Under the care of Dr. WILLSHIRE, Charing Cross Hospital.)

When a patient comes under the notice of the physician with a dry skin, great thirst, and extreme diuresis, a suspicion is entertained that the malady may be diabetes, and an examination of the urine is instituted to clear up the matter. If the specific gravity ranges from 1035 to 1045, the probability is that a large quantity of sugar is present, which will be determined in the usual manner. If, again, the specific gravity is very low, say 1002 or 1005, it may turn out to be an instance of what was formerly called diabetes insipidus, and

now commonly know as *chronic diuresis*, (the hydruria of Willis, and polyuria of Elliottson.) Not a trace of sugar is present in the urine in this affection, although it has been most rigorously searched for in the case which we now place upon record, wherein several gallons of urine were evaporated to a small bulk for the purpose of such inquiry. The similarity between diabetes and chronic diuresis in the large quantity of urine passed, and the presence of thirst and dry skin, renders an examination of that fluid necessary to diagnose between the two.

As regards the immediate locality involved in chronic diuresis, the views of Bowman, Golding Bird, and others, would seem to place it in the Malpighian corpuscles, which thus secrete this large quantity of urine; and supposing there is no organic disease of the kidney itself, and that it is merely an exaggerated functional activity, and is allowed to go on, sooner or later organic mischief is sure to follow. It becomes incumbent, therefore, to arrest this morbid process, which, in its reflex or reactional effect on the system, (as evidenced by the constitutional symptoms of fever, thirst, general irritation, &c.,) will become of serious import to the patient. The little information we possess of the disease, and the feeble hold we have upon it by treatment, render it one of peculiar interest. In the case related by Dr. Watson, in his "Lectures on the Practice of Physic," the duration of the disease was three years, and after death, tubercles were found in the brain and lungs of the patient (a boy). It may last for a much longer period, however, as in the case quoted by Willis, of a man of fifty-five in the Hôtel Dieu at Paris, who had been affected with it since the age of five years, and who had consumed daily since he was sixteen two bucketfuls of water, and discharged a commensurate quantity of urine. Like diabetes, diuresis is apt to end in phthisis; but it is a noteworthy fact that sometimes it is followed by the former affection or mellituria.

A somewhat similar case to the subjoined was under Dr. Willshire's care in the same hospital about two years ago.

C. S——, aged forty, a hawker, was admitted on the 7th of June. He was in good health up to the 12th of May last, when he caught cold, and suffered thirst so that he drank from four pints to a gallon of water daily, besides beer and tea. He soon began to void from ten to twelve pints of urine in the twenty-four hours; and although his thirst was great, his appetite was bad. He was unable to sleep at night, being obliged to rise half a dozen times to micturate. When admitted, he passed fifteen pints of urine per diem, of a very pale-straw colour, quite clear, specific gravity 1002, and free from sugar by the ordinary tests. From that time to the 27th June, the treatment consisted of warm baths, Dover's powder, opium, tincture of the sesquichloride of iron, and quinine. By this, the urine was reduced to seven pints daily, with the specific gravity varying from 1001 to 1007, and containing no albumen. On the 27th, he was ordered a

sixth of a grain of extract of belladonna, with two grains of quinine, three times a day. He now passed, in the twenty-four hours, six pints and a half of urine, of specific gravity 1006.

From the 30th June to the 7th of July, the belladonna and quinine were continued, the former being gradually increased until some symptoms of atropism made their appearance, when the dose was diminished. He now passed eight pints of urine during the day, of specific gravity 1002. He stated, however, that he felt much better; his mouth was not so dry, and he was not so thirsty. His bowels always remained costive. He went out on the 14th ultimo, when the specific gravity of his urine was 1006.

During the time of his stay in the hospital, the weather being very warm, he was ordered to walk in the sun to induce perspiration. The reason for giving belladonna was, that as it is one of the best remedies for allaying the irritability of the lower urinary organs, it might have some influence on the higher organs,—namely, the kidneys themselves. While the patient was in hospital, six gallons of his urine were collected for analysis by Mr. R. V. Tuson, the teacher of chemistry, who had some idea that a *minute* quantity of sugar might perhaps exist in such cases as the present. This quantity was evaporated down to a very small bulk, filtered, and most carefully and repeatedly tested for sugar, both before and after boiling, with dilute sulphuric acid, but no indication of the presence of saccharine matter was obtained. Another portion of fresh urine was allowed to stand in a warm place, in order that torulæ might become developed if any sugar was present, but none were observed.—*Lancet, Sept.* 3, 1859, *p.* 237.

38.—*On the Employment of Tannin in large doses in Albuminous Anasarca.* By Dr. P. GARNIER.—Although the internal use of tannic acid is still very limited in France, its employment in large doses has been much recommended lately in other countries, and has been extended to numerous cases which, while proving its innoxious character, appear to exhibit it as possessing some totally new properties. It has been shown to be useful in all cases where it is required to arrest hemorrhages, to give tone to the organism, or to remedy morbid secretions. It has been employed, for example, with great benefit in albuminuria, diabetes, and serous infiltrations.

From these considerations, Dr. Garnier has been induced to employ tannic acid in the albuminous anasarca consecutive to scarlatina; and he adduces several cases illustrative of this mode of treatment, drawn from his own experience and from cases recorded by other physicians. The cases all prove that in the general serous infiltration of the tissues complicated with albuminous urine, there is a rapid and simultaneous disappearance of these two morbid phenomena under the influence of tannin alone, administered in a large dose. The conclusions drawn by Dr. Garnier are that tannin, employed in doses of two to

four grammes a day (ʒss to ʒj), cures anasarca or œdema developed passively and occurring simultaneously with albuminous urine; that its curative action is manifested by abundant urine, gradually resuming its physiological characters, by perspiration, easy alvine evacuations, return of appetite, &c.; that these signs appear from the second day of the administration of the tannin; that given in solution in doses of twenty to fifty centigrammes at a time, tannin causes no unfavourable symptoms affecting the digestive passages; and lastly, that the action of tannin appears to be exerted primarily upon the fluids of the economy, the albuminous principles of which it coagulates and renders plastic, and that its consecutive action on the solids appears to be tonic and astringent.—*Brit. and For. Med.-Chir. Review, July*, 1859, *p.* 241.

39.—ON MORBUS ADDISONII.

By Dr. Samuel Wilks, Assistant Physician to Guy's Hospital.

[After detailing the last example of this interesting affection, which has occurred at Guy's Hospital, speaking of the scepticism which has prevailed as to the conclusions arrived at by Dr. Addison, as to the fatality and etiology of the disease, Dr. Wilks remarks:]

It has been said that supra-renal disease has been discovered independently of any alteration in the colour of the skin, also that a pigmental discoloration may constantly occur without any morbid affections of these organs; moreover, that they may be found diseased when the patient has died of some acute malady; and even a fourth argument is added, that they may be removed from the lower animals with impunity.

Before considering these objections, let us for a moment look at the original statements put forth by the author. And first of all remember, that the discoloration of the skin, although a striking feature of the complaint, was not the main one insisted on by him; but since it is that which can be pourtrayed in a drawing, and consequently apt to strike the eye on turning over the pages of the monograph, it is not surprising that it was at once regarded as the most remarkable part of the complaint, and would therefore be especially dwelt upon in our ordinary mode of communicating facts to one another, until at last the erroneous opinion would be reached that Addison's disease and discoloration of the skin were interchangeable terms. Now, it is stated by the author himself that he was led to the discovery by a very different method than by studying the changes in the skin; that it was owing to a peculiar interest which he took in the class of cases styled simple and fatal anæmia that this allied affection came under notice, and that it was whilst watching such cases the fact of discoloration was also observed, and subsequently on post-mortem examination its connexion with disease of the supra-renal capsules. The extreme

prostration of all muscular power was the most remarkable circumstance attending these cases, and indeed in some forms of supra-renal affection no discoloration had occurred at all. This was the case in the instance of a man who died in the hospital about two years ago, in whom there was no discoloration of the skin, the only symptom being the most utter prostration of strength, and yet after death these organs were found completely diseased. The most prominent symptoms, then, of the affection are due to this asthenic condition, denoted by the loss of muscular power, weakness of pulse, breathlessness upon exertion, dimness of sight, weakness of stomach, &c.; and if the case has been of long duration, in addition to these, a discoloration of the skin. A sufficient number of cases have now been observed to prove that the change in the skin depends on the chronicity of the disease. This is Dr. Addison's opinion, and the fact has been verified by Mr. Hutchinson, who has taken the trouble to collect all the cases recorded; and therefore it may be said that in the acute form of the disease no discoloration of the skin may be expected, but merely symptoms due to asthenia.

As regards the character of the colour when it occurs, the observation of several instances since the publication of the original memoir has shown that very great similarity has existed in all of them, both as regards the hue itself and its method of affecting the body by a uniform implication of the whole surface. It is true that a case is represented where the body is covered with patches of colour, checkered with white; but here no post-mortem examination took place to verify the diagnosis, and thus the fact is left as we state, that in the first-related cases, as well as in all subsequent ones, there has existed a uniform discoloration of the whole integument. So remarkable has this been, that the body has presented the appearance of a person with dark blood rather than that of a European, and therefore the answer which Dr. Addison continually makes to interrogatories respecting the peculiarity of the discoloration is, that he regards only those cases as characteristic where the surface of the body is seen to be gradually approaching in colour that of an inhabitant of some southern nation. The similarity is proved by examination of the integument itself, which, if placed beneath the microscope, is seen to contain a layer of pigment in the rete mucosum just as in the dark races of mankind; so that no difference, as far as we are aware, can be found between them. Moreover, as in the latter, certain parts, as the axillæ and pubes, are darker than the rest of the body, so in this morbid discoloration these same parts are those most affected. Without, therefore, denying that the colour may sometimes occur in patches, we think we are correct in saying that all experience has hitherto shown that the discoloration has been uniform over the whole surface of the body. The exact hue is difficult to describe, but it may be said to resemble that of a mulatto's skin, and therefore is of a brownish cast, having sometimes an olive-green tinge, and thus the

term bronzing of the skin has come into use, or it has often what our artist calls a walnut-juice shade. To say, however, in short, that the appearance produced is exactly that of a person of dark blood, is to speak as accurately as description will allow. The anatomical characters are probably not very peculiar, and resemble those of many other pigmental changes, arising from various causes, since the true seat of colouring matter is in the cells of the rete mucosum; this is its position in dark races, and also when produced by morbid conditions. An examination of a portion of skin, therefore, would not determine the nature of the case; although, if the colour should be universal, there would be a strong suspicion of supra-renal disease. It is well, however, to remember that the pigment is situated beneath the epidermis, and thus is distinguishable from pityriasis, and many other conditions with which Addison's disease has been confounded. It would seem scarcely needful to say that it is impossible to confound it with jaundice, had the mistake not been often made; indeed, in nearly all instances of the affection which have come before us, an hepatic disease has been the diagnosis; but a moment's observation would be sufficient to show that no bile is circulating through the body—the urine contains none, nor is the conjunctiva yellow, which is the first part affected in jaundice, but here, on the contrary, is remarkably pale and anæmic. It is true, however, that in jaundice the yellowness of the skin is due to a deposition of biliary pigment in the rete mucosum. A remarkable circumstance observed by Mr. Hutchinson in connexion with the discoloration is that in some instances the surface of the body has evolved a peculiar odour, resembling that perceived in dark races of mankind.

The symptoms, then, of Addison's disease are characterised by those of asthenia, and in chronic cases by discoloration of the skin. And now as regards the post-mortem appearances. These may be exclusively confined to the supra-renal capsules, and the disease affecting them is of a remarkably uniform character, differing merely according to the stage of the affection. The disease, without doubt, is closely allied to tubercle, since in several instances tubercles have been met with in the lungs and other parts of the body, or a scrofulous material in some lymphatic glands, closely resembling the deposit in the supra-renal bodies. When the disease is acute the organ is somewhat enlarged, and changed into a material which is semi-translucent, of a gray colour, softish, homogeneous, without structure, or sometimes slightly fibrillated, or contains a few abortive nuclei or cells. This lardaceous material is the first deposited, and resembles what is often seen in the early stage of scrofulous enlargement of lymphatic glands. Subsequently it undergoes a decay or degeneration, as in them, and changes into an opaque, yellowish substance, and thus the two materials are constantly found associated. At a still later period, as in a scrofulous gland, it may soften into a putty-like matter, or it may dry up, leaving the mineral part as a

chalky deposit, scattered through the organs. These, then, are the changes—first, the deposition of a translucent, softish, homogeneous substance; subsequently, the degeneration of this into a yellowish-white, opaque matter; and afterwards a softening or drying up into a chalky mass. It is clear, therefore, that as the discoloration of the skin occurs only in very chronic cases, that it must have been found always associated with these later stages of the supra-renal disease, and that when the skin has been not altered in colour, the earlier conditions have been met with; and this has been the case also in those instances where associated with general tuberculosis. Occasionally, also, some fibrous tissue may be found around the organ, being the products of an inflammation which has united them to the kidney, liver, and adjacent parts. It is not sufficiently remembered that some years are necessary for the changes to occur in the deposit of which we have spoken; and therefore, if chalky substance be found, there can be no doubt that the disease has existed for a considerable period. This corresponds with our knowledge of the duration of the symptoms in some of the best-marked cases which have come before us, and should compel us to keep under notice suspected instances of the disease for several years.

Now, to consider the objections which have been raised as to the correctness of these observations. It has been said, in the first place, that animals have survived long after removal of the supra-renal bodies; now, should this be so (although further experiments are required to corroborate the statement,) it would not militate against the fact that disease of these organs will sooner or later, lead to a fatal result, since similar arguments might be used with reference to other organs which can be removed with impunity, and yet, when subject to morbid conditions, lead to fatal consequences. For example, the spleen is said to be capable of removal without injury to the animal, and this can be well believed, seeing how extremely atrophied it often becomes in old people; and yet we know, at the same time, that when hypertrophied it is sufficient to kill. Moreover, as just now remarked, it does not seem sufficiently remembered that the disease of these organs is naturally slow, and that in all probability they are almost totally disorganised before death takes place; that, owing to some unknown cause whereby their function may be otherwise performed, or be for a time in abeyance, the patient may probably live for years, and then at last die suddenly, in a somewhat analogous way as degeneration of the kidneys may persist for many years, although the patient is always on the brink of a precipice, and ready on any day to die off unexpectedly; but in such a case the importance of the disease might be doubted if the patient had died from other cause, and the renal affection been met with accidently.

As regards the objection that the discoloration offers no anatomical peculiarity, since the pigment is merely deposited in its usual position, it may be answered that this is true with respect to this one fact, but

not true as to the mode in which the body is affected, since we are not aware that at present any case has been brought forward where the whole cutaneous surface has been discoloured so as to resemble the mulatto in the manner mentioned other than that of supra-renal disease. Partial discolorations, as in ephelis, are common enough.

With respect to a third objection, that disease of these bodies may exist without discoloration, this has already been explained as a point admitted when the disease is acute.

Then as regards the accidental discovery of supra-renal disease in the body after death, when not suspected: this, we think, has no greater importance than the discovery of disease of other organs when not anticipated. If found alone it would be sufficient to indicate the mortal nature of the malady, and if associated with disease of other organs it would be difficult to say to which to attribute the symptoms; thus, a general tuberculosis, involving a large number of important parts of the body, may include the supra-renal organs as well, and in such a case there may have been no distinctive marks of the existence of their morbid condition during life, but then the same may be said with respect to all the other organs affected. Again, even should an acute disease carry off the patient, and disease of these organs be found, still (in our present limited knowledge of the subject) it cannot be said that the one affection did not predispose to the other, since in one of Dr. Addison's best-marked cases the patient died of an acute pericarditis.

All these objections which have been raised we consider to be of little value compared with the great facts which remain—that at the present time several cases are recorded where persons have died with no other apparent disease in their body than that of the supra-renal bodies, sometimes associated with discoloration of the skin and sometimes without; facts which show incontrovertibly that their disease is connected directly or indirectly with the death of the patient. Moreover, we cannot bring our mind to conceive how, when in several of such cases a right explanation has been given as to the cause of the symptoms during months or years prior to the patient's disease, this diagnosis was due to a fortunate guess rather than to a rigid scientific deduction.

For the satisfaction of those of our readers who have not had an opportunity of perusing the original monograph, we extract the following important passages from Dr. Addison's work:

"For a long period I have from time to time met with a very remarkable form of general anæmia, occurring without any discoverable cause whatever; cases in which there had been no previous loss of blood, no exhausting diarrhœa, no chlorosis, no purpura, no renal, splenic miasmata, glandular, strumous, or malignant disease. Accordingly, in speaking of this form of anæmia in clinical lecture, I, perhaps with little propriety, applied to it the term *idiopathic*, to dis-

tinguish it from cases in which there existed more or less evidence of some of the usual causes or concomitants of the anæmic state."

"It was whilst seeking in vain to throw some additional light upon this form of anæmia, that I stumbled upon the curious facts which it is my more immediate object now to make known to the profession."

"The leading and characteristic features of the morbid state to which I would direct attention are anæmia, general languor and debility, remarkable feebleness of the heart's action, irritability of the stomach, and a peculiar change of colour in the skin occurring in connexion with a diseased condition of the supra-renal capsules."

"The patient becomes languid, weak, indisposed to either bodily or mental exertion, the appetite is impaired or entirely lost, the whites of the eyes become pearly, the pulse small and feeble, or perhaps somewhat large, but excessively soft and compressible; the body wastes, without, however, presenting the dry and shrivelled skin and extreme emaciation usually attendant on protracted malignant disease; slight pain or uneasiness is from time to time referred to the region of the stomach, and there is occasionally actually vomiting, which in one instance was both urgent and distressing, and it is by no means uncommon for the patient to manifest indications of disturbed cerebral circulation. Notwithstanding these unequivocal signs of feeble circulation, anæmia, and general prostration, neither the most diligent inquiry nor the most careful physical examination tends to throw the slightest gleam of light upon the precise nature of the patient's malady, nor do we succeed in fixing upon any special lesion as the cause of this gradual and extraordinary constitutional change."

In cases of supra-renal disease—

"With more or less of these symptoms we discover a most remarkable, and as far as I know, characteristic, discoloration taking place in the skin; sufficiently marked, indeed, as generally to have attracted the attention of the patient himself or the patient's friends. The discoloration pervades the whole surface of the body, but is commonly most strongly manifested on the face, neck, superior extremities, penis and scrotum, and in the flexures of the axillæ and around the navel. It may be said to present a dingy or smoky appearance, or various shades of deep amber or chestnut-brown, and in one instance the skin was so universally and so deeply darkened that, but for the features, the patient might have been mistaken for a mulatto. In some cases this discoloration occurs in patches, or perhaps rather, certain parts are so much darker than others as to impart to the surface a mottled or somewhat chequered appearance."—*Guy's Hosp. Reports, Oct.*, 1859, *p.* 93.

SURGERY.

AFFECTIONS OF THE BONES AND JOINTS, AMPUTATIONS, &c.

40.—ON RESECTION OF THE ANKLE-JOINT.

By Henry Hancock, Esq., Senior Surgeon to the Charing Cross Hospital.

[In that large and important class of cases wherein disease is restricted to the ankle-joint, or its immediate neighbourhood, the rest of the foot being healthy, for the most part Syme's or Pirogoff's operations are resorted to, the otherwise sound and healthy foot being sacrificed. But in reality these operations are comparatively rarely called for. Only in those cases are they really necessary where there is so large an amount of disease or mischief that all hope of preserving a good and useful foot is precluded.]

The operation which I would advise you to select, in the cases under consideration, is that of Resection or Excision of the Ankle-joint.

The operation was first performed by Moreau, and subsequently by Jäger and others, abroad; but I believe I am justified in stating that, with the exception of those which I have done myself, there is not a single instance upon record in which excision of the ankle-joint has been performed in this country for disease. Why, in this age of conservative surgery and joint resection, the solitary exception should be made in the case of the ankle-joint, and so useful a member as the foot needlessly sacrificed, is an anomaly which I confess I do not understand. We have seen that, in Syme's operation, independently of the entire loss of the foot, there is danger of sloughing or bagging of matter; and in both Syme's and Pirogoff's operations, inflammation, sloughing, and suppuration in the course of the divided tendons. In excisions of the ankle-joint these dangers do not exist. I have now performed this operation four times—three times successfully, once unsuccessfully, the patient dying, some six months after the operation, from lung disease, the result of a dissipated life. In no instance has there been sloughing; there need not be a single tendon artery divided; there is afterwards very little if any deformity—comparatively little shortening; the foot is preserved, and, as you will see by the cases I here relate, the patients are able to walk and run about with scarcely any perceptible limp.

You may bear in mind, however, that the success of the operation depends upon leaving the anterior and posterior tibial arteries intact. If these vessels are injured, there will not be sufficient blood supplied to nourish the part, or power to heal the wound; sloughing will ensue, and your operation fail. Your object also should be, to preserve everything as intact as possible, and on no account to open into the sheaths of the tendons.

The plan I have found answer best is the following:—Commence the incision about two inches above and behind the external malleolus, and carry it across the instep to about two inches above and behind the internal malleolus. Take care that this incision merely divides the skin, and does not penetrate beyond the fascia. Reflect the flap so made, and next cut down upon the external malleolus, carrying your knife close to the edge of the bone, both behind and below the process; dislodge the peronei tendons, and divide the external lateral ligaments of the joint. Having done this, with the bone nippers cut through the fibula, about an inch above the malleolus; remove this piece of bone, dividing the inferior tibio-fibular ligament, and then turn the leg and foot on the outside. Now carefully dissect the tendons of the tibialis posticus and flexor communis digitorum from behind the internal malleolus. Carry your knife close round the edge of this process, and detach the internal lateral ligament; then, grasping the heel with one hand, and the front of the foot with the other, forcibly turn the sole of the foot downwards, by which the lower end of the tibia is dislocated and protruded through the wound. This done, remove the diseased end of the tibia with the common amputating saw, and afterwards, with a small metacarpal saw placed upon the back of the upper articulating process of the astragalus, between that process and the tendo-Achillis, remove the former by cutting from behind forwards. Replace the parts *in sitâ*; close the wound carefully on the inner side and front of the ankle, but leave the outside open, that there may be a free exit for discharge; apply water dressing, place the limb on its outer side on a splint, and the operation is completed.

You observe that the only parts cut through are the skin, the external and internal lateral ligaments, and the bone. Neither the extensor nor flexor tendons, the anterior nor posterior tibial arteries, are injured; consequently you have not to tie any vessels. The patient should be placed in bed, with the leg lying on its outer side; and you should be careful that there are openings in the splint-pad and oil-silk corresponding to the wound, otherwise the pressure of the pad causes the matter to be retained, and will, as I have seen it do, give rise to severe constitutional disturbance.

Case 1.—*Resection of ankle-joint*; *cure.*—J. H., aged eight years, of strumous diathesis, admitted January 30th, 1851, into Charing-cross Hospital, under my care, with disease of the ankle-joint. He had been in a delicate state of health for some time, and about three

years before his admission a boy threw a stone, striking him on the left instep, from which period the joint became affected. On admission, the part presented a glossy, shapeless appearance; hot, and extremely painful on the least movement. It would admit of little, if any flexion, the child being quite unable to bring his heel to the ground. There were two fistulous openings anteriorly to the external malleolus, through which a tube could readily be passed into the joint. Shortly after his admission he was attacked with scarlatina, from which he soon recovered; the joint, however, becoming more painful, and the sinuses discharging thin offensive matter. It was deemed advisable to excise the ankle-joint in this case, the disease appearing to be confined to that part, and I accordingly performed the operation on Feb. 17th, 1851. There was some pain for the next three or four days, caused principally by inflammation of the absorbents of the leg and thigh. The inflammation, however, completely subsided in the course of a week. From this time he continued to to improve until he left the hospital in the following May, cured.

I saw this boy about two years ago; he had become tall and stout, and he told me he could walk, run, and jump without any inconvenience. He wore a thick sole to his boot, and there was scarcely any perceptible limp in his walk.

Case 2.—Excision of the ankle-joint; death in six or seven months.—M. A. G., admitted under my care into Charing-cross Hospital in Sept., 1857. About four years previously a swelling, not preceded nor accompanied by pain, commenced in front of the ankle-joint. A wound soon after appeared behind the external malleolus, which remained open and discharging for about a month, when it healed, and she felt nothing more of it for about eighteen months, when the joint again became swollen and very painful; but she continued to walk about until fourteen months before admission, when the symptoms became so aggravated, that she could not walk at all, whilst for the last five months she could not put her foot to the ground.

When admitted, the joint was much swollen; there were three openings in front of the internal malleolus, which communicated with the joint. On October 5th I excised the ankle-joint. She did not suffer much afterwards, but at the same time she did not progress so rapidly as the other cases have done. She became impatient, and left the hospital without my consent before the part had healed, and I subsequently learned that she died of lung disease some six or seven months after the operation.

Case 3.—Excision of the Ankle-joint.—W. R., aged twenty-five, admitted under my care into Charing-cross Hospital on August 27th, 1857, with disease of the ankle-joint. When three years old he slipped off the pavement, and sprained his ankle, which became much swollen and very painful. Matter formed, which was let out with temporary relief; but he shortly became worse, and was taken to the late Sir Astley Cooper, who advised amputation of the limb; but his

friends objected, and Sir Astley ordered him a wooden leg, to wear from the knee. This he did for six months, but without benefit. Having friends in Killarney he was sent there for change of air, and was attended by a medical man, who, he says, "worked wonders" with him. His treatment was peculiar. He ordered off the wooden leg, and then desired him to put his foot to the ground, and walk in the meadows barefooted every morning, whilst the dew was on the ground. At night he gave him oil to be rubbed into the ankle before the fire. At the end of six months he had improved so much, that he could walk without the assistance of a stick. The joint continued to get stronger every year, but remained stiff. In June, 1855, he came under my care with an ulcer on the side of the ankle. This healed in a fortnight, but the stiffness remained. He was now persuaded to place himself under the care of a quack, who pronounced the ankle to be out of joint. After oiling it well for three weeks with neat's-foot oil, he (according to the patient's statement,) "snapped the bone into its place;" after which he lost the stiffness, and could walk "as well as he could wish." Eight months after this he slipped again, and again consulted the quack, who, he says, "put the bone in a second time." Again, a third time he fell, and a third time he consulted his friend, who this time failed to accomplish his object, in consequence, as he said, of the "nerve resisting him so much." The ankle now began to swell and inflame; matter formed, and he consulted Mr. Tucker, who kindly sent him to me. I need scarcely tell you that when I attended him for the ulcer, there was no dislocation present. "The snapping and putting in the bone" was, doubtless, the disruption of adhesions, and, in all probability, caused the aggravation of mischief necessitating the operation.

At his admission his ankle was much swollen, inflamed, and very painful; there was an open wound over the external malleolus, communicating with diseased bone, and discharging offensive matter. Soon after, the inner side became swollen and intensely painful. An incision was made to relieve the tension, and afforded much ease. He, however, gradually became worse, his health began to give way, and, therefore, on Sept. 10th, I excised the joint. The tibia, fibula, and astragalus were all found diseased. He went on very well. He experienced some little drawback from a small spicula of bone coming away, but he left the hospital cured.

This patient, who is an exceedingly ingenious fellow, has invented a boot, which appears to answer admirably. In the description which he has sent to me, he says, "Finding the cork sole did not give me any spring, I began to consider what I could substitute for the cork, so as to give me greater facility in walking. The result of my meditations was, a steel spiral spring, fixed in the heel of the boot, the cork, of course, being cut away. Then I have the cork sole down to the toes. On the top of the spiral spring is a circular piece of thick leather, and I derive great benefit from the invention."

He also wears the usual side irons for weak ankles. I met him the other day walking down Hampstead Hill, and he certainly showed no signs of having undergone so serious an operation.

Case 4.—Excision of the ankle-joint and removal of a considerable portion of the os calcis, for disease.—J. T., aged six years, residing at Hounslow, was sent to Charing-cross Hospital, under my care, in Sept. 1858, by my friend, Mr. Chapman, having for the previous four or five months suffered pain in the left ankle. On the 26th of Aug. he leaped from the top of a wall five feet high, and so hurt the joint that he had to be carried into the house. Considerable swelling and suppuration ensued, and, when admitted, he was very ill, weak, and feverish, his countenance being anxious and indicative of great suffering. There was an unhealthy looking wound in front of the internal malleolus, discharging a large quantity of offensive matter, and a probe readily penetrated the joint, which was found extensively diseased. His friends having consented, I excised the joint on the 9th of October, in the manner I have described to you; but after removing the upper portion of the astragalus, which was carious, I found the disease extended through and beneath this bone, involving the os calcis to a considerable extent. The convex tibial articular surface, and the whole of the body of the astragalus behind the interosseous calcaneo-astragaloid ligament, were removed, as well as the remains of the corresponding articular surface on the upper part of the os calcis; whilst the interior of that bone, behind the interosseous notch was carefully gouged out before the disease could be got rid of: so that little more than the shell of bone remained in that situation. No arteries were tied. The boy suffered very little constitutional disturbance, his general health and appetite having been uniformly good, and his progress satisfactory.

March 10th, 1859. He is now cured, he can stand upon his foot and walk without pain. The wound is entirely healed.

This case shows in a very marked manner the value of the operation. Had Pirogoff's method been employed, it would inevitably have failed, from the condition of the os calcis. It also shows how extremely valuable is conservative surgery—in young people, at all events. The amount of disease and the state of the os calcis almost made me doubt the result; but yet we find the child going through the cure with scarcely any constitutional disturbance, the cavity in the os calcis filling up and becoming sound, and a perfect cure taking place in five months from the time of operation.

With these cases before you, I feel quite justified in advising you to adopt this method wherever you are called upon to operate, provided the disease appears confined to the ankle-joint. In gun-shot wounds and other injuries, your proceedings must be guided by the extent of implication of the soft parts.—*Lancet, Oct.* 1. 1859, *p.* 331.

41.—ON DISEASES OF THE TARSUS.

By JOHN ERICHSON, Esq., Surgeon to University College Hospital.

In no region of the body have the good effects of modern conservative surgery been more distinctly shown than in the tarsus. In the "good old times" of surgery, if a person had a white swelling of the bones of the foot, or a diseased tarsus, he was at once condemned to amputation of the limb. It was enough for a patient to have "disease of the tarsus" for him to have his limb removed; no distiuction being made between disease of the different parts of the foot, nor any attempt to save the sound by the sacrifice of the diseased part.

Until a comparatively recent period, indeed, "diseased tarsus" was described as a whole. Surgeons did not endeavour to make out the exact extent and amount of the disease, and any case described as "diseased tarsus" was looked upon as requiring amputation of the leg. The rule of practice then observed was, amongst the wealthier classes—those who could afford the expense of a "cork leg"—to amputate a little above the ankle; but amongst the poorer classes, to remove the leg about a couple of inches below the knee, so as to give the patient a stump which, when bent, would fit into the socket of a wooden pin. Thus, in the latter case especially, not only was the leg, itself perfectly sound, sacrificed, but the patient was exposed to great additional danger; for if there be one point more than another which has been indisputably proved by surgical statistics, it is, that the mortality after amputations increases, *cæteris paribus*, in exact proportion as we approach the trunk, every additional inch which we remove augmenting the danger to the patient. This practice continued to prevail until M. Chopart drew some distinctions between the treatment to be pursued, according as the disease affected the anterior or the posterior tarsal bones and articulations. He showed that when the anterior articulations only were affected, amputation at the junction of the astragalus and calcaneum with the scaphoid and cuboid—an operation which goes by the name of "Chopart's amputation"—ought to be performed; thus removing the whole of the disease, and the patient recovering with a shortened foot, but, the heel being preserved, one on which he could bear the weight of his body, and which would be highly useful to him.

The next step in the conservative surgery of the lower extremity, in cases of diseased foot, was the operation introduced by Mr. Syme,—that of disarticulation at the ankle joint. This was certainly a great advance, for the flap being taken from the heel, the patient has a stump on which he can bear. The operation is also a very safe one. I do not know the precise statistics of all recorded cases; but this I know, that I have performed it nine times without a death, and this, in the lower extremity, is extremely satisfactory.

Since the introduction of anæsthetic agents, conservative surgery has taken great strides, and I think you may look upon conservatism

in surgery as the necessary result of anæsthesia. For although operations of this kind were performed years ago by the Moreaus, Park, and others, and their utility demonstrated, yet the operations of gougings, scrapings, and partial resections were so horribly painful to the patient, and occupied so much time in their performance, that surgeons dreaded to undertake them. Of late years surgeons have learned to discriminate disease of one part of the tarsus from another, and to apply a different, but appropriate, treatment to each.

Looking at the subject in a diagnostic point of view,—and the treatment is most intimately connected with the diagnosis,—we find that the pathology of diseases of the tarsus is closely connected with its healthy anatomy. Composed, as it is, of seven bones, it presents four distinct articulations. By the term "articulation," applied to the tarsus, I do not mean merely the connexion of contiguous bones with each other, but distinct synovial sacs shut off from communication with other synovial sacs in the foot.

The *posterior calcaneo-astragaloid* is the first of these; next comes the *anterior calcaneo-astragaloid*, the synovial membrane here serving also for the *astragalo-scaphoid;* the *calcaneo-cuboid* is the third; and the *anterior tarsal synovial membrane* is the fourth and largest of all, and the most important in a surgical aspect. It extends between the scaphoid and the three cuneiform and cuboid bones, between the cuneiform bones themselves, between the two outer cuneiforms, and the bases of the second and third metatarsal bones, and also between the external cuneiform and the cuboid.

In the vast majority of cases, so far as my experience goes, it is the osseous structures, and not the articulations, which are primarily diseased. The bones, being cancellous, far removed from the centre of circulation, and exposed to alternations of temperature, readily become the seat of congestion and caries, rarely, however, of necrosis; and in strumous subjects not unfrequently fall into a tuberculous condition. Caries, whether simple or tuberculous, once set up in the bones, speedily implicates the articulations secondarily.

Now you can easily conceive, on casting an eye on the arrangement of the tarsal synovial membranes, that the extent of disease will, in a great measure, depend upon its seat. Thus, a person may have disease in the os calcis, extending even to the cuboid, with very little likelihood of its proceeding farther for a length of time. Such disease will be limited to the outer part of the foot, does not involve its integrity, and readily admits of removal by operation. But let him have disease springing up in the scaphoid, or in one of the cuneiform bones, or in the bases of the second or third metatarsal bones, then the morbid action will rapidly spread through the whole of the anterior and inner part of the tarsus, and, in all probability, no resection operation can be advantageously employed. So that the seat of disease influences materially its amount, extent, and the kind of operation required for its removal.

Let us now consider the various bones of the tarsus separately, as primary centres of disease.

The *os calcis* is diseased more frequently than any other bone of the foot, being, from its exposed situation, liable to injuries of all kinds, receiving the weight of the body when alighting on the feet in jumping, and having strong muscles inserted into it. Caries is the disease usually attacking the calcaneum; necrosis very seldom, although we sometimes find a piece of necrosed bone in the centre of a carious cavity. When this bone is diseased, the posterior part of the foot is swollen, and perforated by one or several fistulous openings, through which a probe passes down to, and sinks into, carious bone. On further examination, we find that the rest of the foot is healthy. Having thus limited the disease to the os calcis, what course is open to us in the way of curing the patient of the disease? Why, we may of course lay open the sinuses freely by means of a T-shaped incision, and gouge away the diseased osseous structures. This may always be done with success, however extensively the cancellous structure of the bone is involved, provided an external sound shell exists. You have often seen a little girl, who now occasionally attends here amongst the out-patients, upon whom I performed this operation twice, the disease having recurred after the first gouging. So much of the calcaneum was taken away in that case, that a mere shell of bone only remained; and yet the removed bone has been replaced by fibroid tissue, which will in time no doubt ossify. She has a perfectly useful foot, and the only sign of any operation having been performed is a small, depressed cicatrix on the outer side. Indeed, where you have disease limited to the os calcis, such an operation as I have just mentioned will generally be attended with an excellent result, and it is but very seldom indeed that complete excision will be required. But in some cases you will find that the morbid action originating in the os calcis has not only involved the whole bone, but has extended somewhat beyond it, implicating the calcaneo-astragaloid, or the calcaneo-cuboid articulations, or both. Then you must proceed as I did in the case of a girl who was in the hospital last summer,—namely, perform complete excision of the whole os calcis, and gouge away any diseased bone that may be met within the astragalus or cuboid. The girl made an excellent recovery; the heel continues somewhat flattened, it is true, but she has a sound and perfectly useful foot.

The *astragalus* is situated in a position of great surgical importance. Articulating, as it does with the malleolar arch above, with the calcaneum below, and with the scaphoid in front—forming, as it were, the key-stone of the foot—it is perfectly evident that any morbid action commencing in it is very likely to spread to and involve all the more important structures of the foot. Seldom, indeed, does disease originating here long remain confined to this bone; and, so far as my experience goes, gouging operations, even if performed at an

early period, are rarely of much benefit, the morbid action continuing to extend notwithstanding their employment. Indeed, in diseased astragalus, I believe that excision ought, as a rule, to be practised in preference to gouging, contrary to what is the case in the calcaneum. In these cases you find swelling just in front of the malleolar arch, with fistulous openings leading down to the diseased astragalus; the anterior part of the foot and the heel being quite sound. You may have disease of the ankle-joint itself, depending upon primary disease of the astragalus for its origin, and then the laxity, grating, &c., symptomatic of diseased articulations are present. The treatment in such cases consists generally in removing the astragalus from its bed, and gouging away any diseased bone which may exist either on the upper surface of the calcaneum or under surface of the malleolar arch. Very large portions of bone may be removed from this situation. I have taken away the whole of the malleolar arch and astragalus, and gouged out the upper surface of the os calcis very freely, and yet the patient has recovered with a strong and *movable* foot, but very little shortened and deformed.

The *scaphoid bone* stands next in importance to the astragalus in its power of implicating a great extent of the foot when diseased. The morbid action may extend either backwards, and affect the astragalus—in which case you will act much as you would do in disease of the latter bone; or it may pass forwards, and then the whole anterior tarsal synovial membrane becomes affected. A bulbous swelling of the anterior part of the foot, perforated by fistulous openings leading to diseased bone,—the heel, astragalus, and ankle-joint being free,—indicate the existence of the condition which I have just named.

How, then, are we to treat disease of the scaphoid extending to the large anterior tarsal synovial membrane? Resection in such cases is, I believe, useless. I have never seen nor heard of that operation being done, and I should imagine that if the scaphoid were excised, the operation would be followed by total disorganisation of the foot, requiring amputation. In these cases Chopart's operation is usually the only resource, and should be performed, except in certain instances, where, from the very extensive disorganisation of the soft parts, we may require to go farther back.

When the *cuneiform bones* are the seat of caries, you will generally find that the middle cuneiform is the bone primarily affected. Thence the disease extends to the lateral ones, or to the basis of the second and third metatarsal bones. In such cases the anterior tarsal synovial membrane usually becomes extensively implicated, and Chopart's amputation will be required. But if the morbid action continues to be limited to the middle cuneiform and the contiguous metatarsal bones, and the patient's general health is good, removal of the diseased osseous structures by the gouge, with extraction of the carious cuneiform, may be attended by successful results.

The *cuboid* is seldom primarily diseased. I have had two such cases,

one of which was successfully treated by gouging; but, in the other —that of a man named J., whom some of you will recollect—Chopart's amputation became necessary, in consequence of implication of the anterior tarsal synovial membrane.

In many cases of diseased tarsus, as in that forming the text of these remarks, the morbid process is not confined to one, but spreads to several other bones. Here you must be guided in your treatment by the seat and extent of the disease. In one such case—in a lad about sixteen, who was sent to us from Staines—I removed the lower two inches of the fibula, some of the under surface of the tibia, and greater part of the astragalus, os calcis, and cuboid, and yet complete recovery took place; and in the man upon whom I operated last week, although nearly the whole of the outer side of the foot was gouged away, I should expect an excellent result were it not that the articulation between the cuboid and external cuneiform bone has been opened, and that (and now you will see the force of the remark I made at the commencement of the lecture), in consequence of this the disease is likely to extend across the foot, disorganisation of the whole foot to take place, and amputation to become necessary.

In conclusion, I must warn you not to be in too great a hurry to operate on very young children. You will find that in infants, and in children under five years of age, caries of the tarsal bones with abscess may frequently be recovered from by proper constitutional and local treatment, conducted on ordinary principles, without the necessity for operative interference.—*Lancet, June* 18, 1859, *p.* 603.

42.—ON PIROGOFF'S OPERATION.

By Dr. Eben Watson, Lecturer on Physiology in Anderson's University, Glasgow, and Surgeon to the Glasgow Infirmary.

[James M'G——, aged fourteen, received a severe injury to the foot whilst cleaning machinery. The whole foot, with the exception of the heel, was completely "smashed," as it is familiarly but expressively denominated.]

There could be no difference of opinion as to the propriety of amputation in such a case. The only question was where it should be performed. The parts were much too severely and extensively injured to admit of Chopart's amputation through the tarsus being practised with any hope of success. I might have performed Mr. Syme's amputation through the ankle-joint; but, from the shattered state of the foot, the dissection of the heel-flap would, I think, have been difficult. It seemed to me that this was a favourable case for performing the amputation recommended by M. Pirogoff; for the skin and bone of the heel seemed to have been uninjured, while no other portion of the foot was in a condition to be saved. My col-

leagues agreed with me in this opinion, and therefore, the patient having been put under chloroform, I proceeded with the operation as follows:—

With a straight, pointed, and strong bistoury I divided all the tissues down to the os calcis, from a few lines in front of the inner malleolus, to the same point on the outside of the ankle, and I connected the extremities of this incision by another across the front of the ankle. I then opened the joint, and cut the lateral ligaments carefully, especially the inner one, keeping close to the bone, that I might not injure the posterior tibial artery. I next sawed through the os calcis, from above downwards, close to the posterior margin of the astragalus; and, having cleared the articular ends of the tibia and fibula, I sawed off a thin film of bone from them, of course taking away with it the two malleoli. Some of the tendons that had escaped the knife were now shortened, and then the plantar arteries and the anterior tibial were tied. I now found that when I brought up the cut surface of the heel bone to the cut surface of the tibia and fibula, they were easily placed in exact apposition, and were as easily retained there by three silver sutures in the front of the stump, bringing the ligatures out by the sides of the wound, which were left open, so as to admit of a free discharge. The stump was surrounded by wet lint enveloped in oiled silk paper, and, when the boy had been replaced in bed, it was laid on a pillow. After recovering from the chloroform, he took twenty drops of laudanum, and slept pretty well during the night. For a few days he was feverish, and required low diet, laxatives, and even an antimonial mixture; but this passed off when suppuration became established in the wound. His health was at no other time affected during his stay in the hospital.

Locally, the treatment consisted in having the leg bandaged pretty firmly in a hollow posterior splint of pasteboard padded with cotton, and cut away at each side of the heel, so as to allow the discharge to run away freely. The wound was kept clean by changing the dressings every day, but the splint was only changed on the second, third, or fourth day, as it seemed to require. The ligatures came away on the sixth or seventh day after the operation, but the sutures were allowed to remain in twice as long. On their being removed, a strip of plaster was placed so as to keep the wound together, but I do not think it was either very effective or very necessary, and it was soon dispensed with. The posterior splint, and a turn of bandage brought round the point of the stump as well as laterally, were, I think, the means of keeping the parts in due apposition during the healing process. Water dressings at first, and afterwards lint dipped in olive oil, were the only other applications used.

About three weeks after the operation, a small abscess formed above the inner ankle. It was freely opened, and healed readily. The original wound, too, had united healthily by the beginning of October, and the boy was then allowed to walk about on crutches,

still, however, wearing the splint for the sake of greater security against injury to the stump. About the same time I observed that the calcis had become united to the tibia and fibula, so as to be nearly immoveable. I did not, however, allow this to be very severely tested.

On the 17th of December, I showed this boy to the clinical class at the Royal Infirmary. He could then walk with perfect freedom on the stump, and without any lameness. As he stood before the class there was no apparent deformity, but when the limbs were compared from the knees downwards, the left (or one operated on) was about half an inch shorter than the other. The stump was as perfect as can be imagined. It was difficult to make out the cicatrix in front. There was complete osseous union between the bones involved in the operation, so that they formed an united support for the body; and the skin of the heel, tough, strong, and smooth, formed a very hardy covering for its extremity.

In regard to the performance of Pirogoff's operation, I would offer two remarks:—

1st. It is much easier to avoid cutting the posterior tibial artery behind the inner malleolus in this operation than in that proposed by Mr. Syme. For every one who has performed the latter knows that he is not the least likely to cut the artery so long as he is attending to it—viz., while he is separating it from its attachments. It is when he is doing something else, and especially when he is dissecting back the skin of the heel, that his knife is apt to slip upon the vessel before he is aware. Now, in Pirogoff's operation, after the artery has been detached along with the skin below the inner malleolus, the operator cuts no more in that direction at all. He has only to cut the internal lateral ligament of the ankle-joint, keeping his knife close to and parallel with the astragalus, and then to use the saw; the soft parts being held back for him by his assistant, by means of a blunt hook or with his fingers.

2nd. M. Pirogoff, in his memoir describing his new operation, writes as follows:—"I separate the short anterior flap from the two malleoli, and saw through them at the same time close to their base." And again: "I turn this flap (the posterior) forwards, and bring the cut surface of the os calcis *in apposition* with the *articular surface* of the tibia. If *the latter be diseased*, it is sometimes necessary also to saw off from it a thin slice with the malleoli."

I wish to draw your attention particularly to these directions, because I venture to differ from M. Pirogoff in regard to them. I even think that the unfortunate issue of some of his cases may be attributed to his following that plan of operating. In my opinion, you ought always to saw off the articular extremities of the bones of the leg; for then you have a clean surface of cancellar bone on either hand—viz., at the anterior part of the os calcis, and at the inferior extremities of the tibia and fibula. Such surfaces are the best adapted for speedy osseous union; whereas, if the articular surface of

the tibia is left untouched, as I understand M. Pirogoff recommends to be always done when it is not diseased, the synovial membrane and cartilage must inflame and suppurate, and be partly absorbed, partly discharged, before osseous union can take place between the tibia and calcaneum. The position of matters is very different when soft parts are to be applied to the surface of a joint, as in amputation through the wrist-joint, which you saw me perform about three weeks ago, and which has healed without one of those untoward circumstances that used to be dreaded by surgeons in such cases. If, however, the operation of M. Pirogoff be performed without excising the articular surface of the tibia, we should have a state of matters more analogous to the excision of one surface of a joint, which few surgeons would recommend. The bringing up of the os calcis, and not a soft flap, upon the articular surface of the tibia makes the greatest differences in the processes pursued by nature before healing is permitted. In the one case it is generally simple adhesive inflammation; in the other, it is, as I have stated above, a more lengthened and complicated, and therefore more dangerous, process. Hence it is that I should recommend the surgeon in all cases to saw off a thin layer of the articular surface of the tibia along with both malleoli, before he brings up his posterior flap.

But if this is to be done, it may be asked why disarticulate at all? In thinking of this question, I planned the following procedure, which, I think, will be found easier than M. Pirogoff's. The leg is placed on its side, the operator holding the front part of the foot to be amputated in his left hand. He then makes an incision with a bistoury across the sole of the foot, from the tip of one malleolus to that of the other, carrying it right down to the os calcis. He then applies the serrated edge of a small amputating saw in the wound so as to divide the os calcis at such an angle as will enable him to avoid touching the malleoli. The assistant ought to steady the os calcis by grasping the heel between his finger and thumb, while the operator is using the saw. The latter then resumes his knife, and placing it between the divided surfaces of the bone, cuts a little upwards, till he gets fairly behind the upper portion of the ankle-joint. The posterior flap is now formed, and should be turned upwards on the back of the leg by the assistant, so as to keep it out of the way. The knife should next be carried in a circular manner round the anterior aspect of the joint, dividing the skin in such a way as to unite the points of the former incision by this transverse one in front. The skin in front should then be pulled up a little, and the tendons and other structures should be divided down to the tibia and fibula, just above the ankle-joint. Lastly, these bones are sawn through in a slanting manner, by directing the saw from before backwards and downwards. The posterior flap is now brought up, and it will be found that the cut surfaces of the tibia and fibula on the one hand, and of the os calcis on the other, will fit each other exactly.

The skin in front is united by wire sutures, and the operation is finished.

I am not at all anxious to claim originality in regard to this modification. My aim is not to rob M. Pirogoff of any share of that honour which is justly his due, but to assist in perfecting and establishing his operation amongst the resources of surgery. Nor am I singular in thinking that the operation, as proposed by him, admits of improvement. Many surgeons in this country and on the Continent have suggested variations in its performance, and I only ask that the above method of operating, *without disarticulating*, which is its sole distinctive feature, may be carefully considered, as I have no doubt the other proposals have been.

I may remark that I do not think the slant-cutting of the os calcis an improvement in itself, though it has been proposed by M. Sédillot so long ago as 1855, and again by Mr. Busk, of the Seaman's Hospital, in 1858. I have merely adopted it in my modification for the purpose of avoiding collision with the malleoli in sawing through the os calcis; but I believe that the less slanting the longer will be the limb, and the greater the ease of keeping the ends of the bone in apposition.

The method which I have proposed occupies less time than that of M. Pirogoff; the risk to the posterior tibial artery in disarticulating the foot, and the trouble of the additional dissection are avoided, while an equally good stump is made in the end. Besides, it will be found that, in performing M. Pirogoff's operation for some injuries of the foot, in which the greater part of it has been destroyed or lacerated, one of the surgeon's chief difficulties will be, the want of purchase in steadying the foot while he is sawing through the calcaneum after disarticulation. He can only hold it by the broken and lacerated front part; whereas, if he applies the saw in the way I have proposed, the attachments of the ankle-joint, and the possibility of the assistant's seizing the projecting part of the heel, make his work much easier. Again, in sawing off the articular ends of the tibia and fibula, he has the astragalus to hold by, instead of the slippery ends of the malleoli.

After I had performed this operation twice on the dead subject, and was convinced of its suitableness for the accomplishment of the object in view, I employed it in the following case.

Thomas M'C., aged thirty-three, carter; admitted on the 4th January, 1859. "This afternoon a loaded railway waggon knocked the patient down, and passed over his right foot, producing great laceration of the soft parts, and fracture of many of the bones of the foot. The tissues on both sides of the ankle and foot are very much separated from the bones. Patient does not labour under any shock."

At a quarter-past nine P.M. a consultation was called on this man's case. I then found his foot completely smashed except the heel, and, as stated above, the skin and soft parts were separated back to the very malleoli. Indeed, so bad was the laceration that some of my colleagues recommended amputation at the lower third of the leg.

On careful examination, however, I found that I could perform the operation above described; and I accordingly did so, making as good a stump as in the former case, with much greater ease and expedition. The patient was feverish for a few days after the operation, and received gentle antiphlogistic treatment. He afterwards progressed slowly but uninterruptedly in his amendment. Just as in the preceding case, the limb was placed in a posterior splint of pasteboard, the stump was covered with water dressings, and the whole was supported by a bandage. The dressings were, of course, changed from time to time, but no adhesive plaster was applied to the wound.

He was dismissed cured on the 12th of March. His stump was sound, and the union of the bones perfect. He had been for some days accustomed to walk on crutches.

M. Pirogoff seems to dread the occurrence of two evils after this operation. These are—

1st. The death of the os calcis. Now, I can hardly think that there is any very great danger of this occurrence, especially if the posterior tibial artery is not divided too high up. And even if the performance of the operation is thus marred, still the branches from the posterior peroneal artery to the outside of the calcaneum would, I think, be sufficient to maintain its vitality. At all events, there is no greater risk of death of the os calcis than of the posterior flap in Mr. Syme's operation. The same precautions are requisite in both cases, and will be equally efficacious in both.

2nd. Abscesses in the sheaths of the tendons are greatly feared by M. Pirogoff; and it cannot be denied that they are likely to occur in some of these cases. He recommends that the tendons be not cut too short in the formation of the flaps; otherwise, when the muscles contract, the sheaths will be left empty towards the wound, and, in his experience, more liable to suppuration. It is very proper to attend to this advice, but surely it is seldom that these abscesses, supposing them to have occurred, are so very dangerous as he represents. The abscess is in most cases limited by exudative matter to a small part of the sheath, and, if freely opened when pus has formed, it generally proceeds no further, but heals kindly and readily. Such an abscess formed in the first of the cases which I have reported above, and it hardly retarded the progress of the case for a single day. It will, moreover, be obvious that this is a danger which is apt to present itself in all cases of amputation through parts supplied with long tendons, as at the ankle or in the forearm, but it has never been considered so very formidable by other surgeons.

It has occurred to me, that the splint, which I kept steadily applied in these cases, may have operated favourably in preventing the formation of abscesses in the sheaths of the tendons. This apparatus, no doubt, kept the whole limb quiet, permitted no jerking of the muscles, and prevented, to a certain extent, their contracting and pulling the tendons up from the cut extremities of the sheaths.

The chief advantages of M. Pirogoff's operation are—1st, that the length of the limbs is preserved as nearly equal as possible under the circumstances. M. Pirogoff's own statement is thoroughly borne out by my experience of his operation:—"The leg," says he, "after my operation, appears an inch and a half (sometimes more) longer than in the three other operations (Syme, Baudens, Roux), because the remnant of the os calcis left in the flap, as it unites with the inferior extremities of the tibia and fibula, lengthens them by an inch and a half." In the case of the boy M'G., the left leg is only two-fifths of an inch shorter than its uninjured fellow; and in M'C.'s case it is not more than an inch and a half. This great difference, in these two cases, is easily accounted for—(1.) Everybody knows that there is great inequality in the length of the os calcis in different persons; some are more spur-heeled than others, and these persons, however clumsy their feet may have been before, would obviously make the best subjects for Pirogoff's operation. (2.) In M'C.'s case, the soft parts round the ankle were much lacerated, as formerly stated; and, in paring my anterior flap, I had to cut rather higher up than was desirable. The saw was also applied fully high up, so that a good half inch of the tibia was cut off. Had it not been for this accidental circumstance, his limb might have been nearly half an inch longer.

2nd. The skin and areolar tissue of the heel are stronger and sounder in the stump after Pirogoff's operation than they could be if dissected off the heel, and applied to the ends of the bones of the leg, as must be done in any form of amputation through the ankle-joint. The support for the body is thus much better in the former than in the latter case, and the patient is sooner able to use it in walking. The boy M'G., on whom I first operated, began to walk on his stump as early as six or eight weeks after the operation, and, in less than four months after its date, he could use it with perfect freedom. He still continues to do so, and his defect is hardly observable, whether in walking or standing, although he wears a very clumsy artificial foot. The other patient, M'C., was, for some time, timid in using his stump, but by the beginning of May, when he last showed himself at the hospital, he had quite overcome that feeling. He had obtained a very good light artificial foot, of such simple construction, that it only cost a guinea. He could walk without a stick, and it was remarked by every one who saw him, that no stranger could discover from his manner of walking that he had lost his foot.

In conclusion, I think that M. Pirogoff's operation is a great improvement in surgery, and I am astonished to learn that he has himself departed from it; for so it was reported officially by Messrs. Mouatt and Wyatt to Sir John Hall (Fergusson's Surgery, 4th edit., p. 487). For my part, not only can I see no good reason for abandoning the operation, but I think its proposer deserves much credit. It seems to me preferable to any other form of amputation at the

ankle joint when the heel is sound; and I shall even go further, and maintain that it is, *in some cases*, preferable to Chopart's amputation through the tarsus. I refer to cases of injury of the foot in which the latter operation is sometimes attempted, though it may be impossible, owing to the laceration, to procure a sound covering of soft parts for the astragalus. Now, when this is not done, the face of the stump is apt either not to close at all for a long time, or to ulcerate whenever an attempt is made to use it. It thus remains painful and useless for a length of time, during which the muscles of the calf of the leg contract and pull up the heel, thus increasing the mischief both as to pain in walking and deformity of the injured limb. Illustrations of these remarks must have occurred in the experience of every practical surgeon, and two cases lately came under observation in our own hospital; the patients having sought relief because of their painful and ulcerated, and therefore useless, stumps. In the stump which remains after Pirogoff's operation such a state of matters could never occur, both from its shape and from the fact that the operation wound is *fixed* high up in front, where it is in no danger of being hurt in walking.

I have said nothing as yet about the choice of cases for this operation, and, indeed, very little need be said at all. It is obvious that the heel bone must be sound, otherwise the case is not suited for Pirogoff's opetation. When the tarsal bones are diseased, the os calcis is seldom free from the morbid affection; hence, in such cases, Syme's operation is generally more applicable: whereas, in accidental injuries of the front part of the foot, if neither Hey's nor Chopart's operation can be performed with a good covering of soft parts in front, then an admirable stump may generally be procured by adopting the procedure of M. Pirogoff.—*Lancet, June* 11, 1859, *p.* 577.

43.—ON SURGICAL OPENINGS INTO THE KNEE-JOINT.

By JOHN ADAMS, Esq., Surgeon to the London Hospital.

[Is it desirable or necessary to open by incision so large and complicated a joint as that of the knee? Some years ago a man was brought into the London Hospital who had been bitten in the knee by a tiger Suppuration occurred in the joint, and the limb was amputated. Instead of the amputation, a free incision ought to have been made into the knee-joint, to give exit to the matter. There are now four cases under the author's care, in which he has thought it necessary to open the knee joint. They are all different in many very important respects.]

The first is that of a man about 45 years of age, who was admitted into the hospital in consequence of a compound fracture of the patella, which necessarily caused an opening into the knee-joint. The treatment pursued in the outset of this case was, in my opinion, quite

judicious, as a laudable attempt to save the limb was made; and, the parts being accurately adjusted, the limb was kept in an extended position, and the usual antiphlogistic means being had recourse to, the wound over the patella soon healed. But the case did not progress satisfactorily; for, inflammation occurring, abscesses formed in various directions, some superficial and others very deep, so that I was compelled to cut through the muscles of the calf to remove some dead fascia which kept up the discharge. After this, pus formed in the interior of the knee-joint, and I was compelled to make incisions on either side of the patella at different times, to give exit to the matter. After struggling on for a length of time, anchylosis of the knee took place, at an angle certainly not quite convenient for freedom of progression; but I hope the limb will eventually become useful, as all discharge has ceased for a considerable time.

The next is the case of a man, aged about sixty, who was admitted in consequence of some obscure inflammation of the leg after an injury. The case was progressing favourably, when a deep-seated swelling formed in the ham, and, after a few days, deep fluctuation was detected, which led me to make a very cautious opening, through which a large quantity of pus was evacuated. The opening was enlarged, and it was found that the matter came from between the heads of the gastrocnemius externus, and close to the large bloodvessels in the popliteal space at the back of the posterior ligament of Winslow.' Nothing untoward happened for some days, when the abscess ceased to discharge, and the knee-joint began to swell. The swelling increased day by day, and evidently indicated suppuration in the knee-joint. Now this was very remarkable, because it appeared as if the matter had made its way from the popliteal space into the interior of the joint through the posterior ligament; at least, it appeared so to me. However, severe constitutional irritation occurred, and it became requisite, from the tension of the joint, to do something for the patient's relief. I had some idea of amputating the limb, but it was determined, at a consultation with one of my colleagues, to make an attempt to save the limb, and, to effect this, to make a free incision into the joint. I therefore opened the joint, first on the inside, and, at an interval of ten days or a fortnight, on the outside, and gave exit to a large quantity of sero-purulent fluid on both occasions. The man has struggled through, with a constitution evidently damaged by hard living, and severe labour, and is progressing favourably now; but the opening still remains patent on the outside of the knee, and the fungus nature of the granulations points at some deep-seated disease, probably of the bone itself. I cannot speak very favourably of the case, but I think enough has occurred to show me that, if his constitution were sound, he would make a fair recovery, with an anchylosed joint. I have now directed him to be sent into the country for the benefit of his health. The case is remarkable, from the peculiar course which the abscess appeared to take, having made its way from the popliteal space into

joint itself. I feel satisfied in my own mind that amputation of the thigh would have been attended with a fatal result, from the defect in the man's constitution; and, therefore, although the cure is as yet imperfect, I am under the impression that no other treatment could feasibly have been adopted than the one I pursued; at any rate, it proves that you can open the knee-joint without destroying life or limb.

The third case is one of a lad about twelve or thirteen years old, who was admitted in a very advanced stage of low fever. He had also considerable swelling of the left leg, consequent on inflammation of the subcutaneous cellular tissue. A large abscess formed over the head of the tibia, which I opened. After this, matter formed very deeply along the outside of the knee-joint, and this I opened. Soon afterwards the joint itself became much swollen and painful, and was tense with fluid. I suspected matter in the joint, and made a free incision into it. I found a large collection of pus, and the articular cartilages extensively eroded. I could not advise amputation, as he was still labouring under symptoms of low typhus fever; and he sank, after a few days, with signs of general pyæmia.

In this case it was apparent from the beginning that no operation was advisable except that of opening the joint to give exit to the matter. It is of no use amputating in such cases, as the constitutional disease, (probably the cause, rather than the result, of the local mischief) could not be benefitted by so violent a procedure. And I cannot help thinking that operations performed under such conditions, fatal as they always are, bring discredit upon surgery, inasmuch as they are always and unexceptionally attended with the loss of life.

Now, the last case of this series to which I shall direct attention is one now under treatment, and is that of a man whose limb I amputated in consequence of extensive injury to the ankle-joint. This case is interesting as showing how much the constitution can bear under very unfavourable circumstances, and under a most complicated series of affections. The man's condition has been no doubt materially injured by a habit he acquired in China of eating opium to a large extent.

He was admitted three or four months ago in consequence of extensive injury to the left ankle from the falling of a heavy weight on his leg and foot, by which he sustained a fracture of the tibia above the malleolus; and the fracture being exposed, it may be termed a compound fracture. Sloughing of the skin over the inside of the leg and ankle laid bare a large portion of the tibia, which protruded to a great extent, being detached from the lower fragment, which remained in connexion with the astragalus; this, however, becoming subsequently detached, was removed by the dresser. About four inches of the protruding tibia was dead; the consequence was that extensive suppuration was going on, and there was no possibility of repairing the mischief without amputating the leg or removing the dead bone. On consultation, it was determined to saw off the dead

bone. There was no difficulty in doing this; and there appeared to be a fair prospect of success, as granulations of a very healthy character shot up from every part of the exposed surface. However, after three or four weeks, the man got materially worse, and the granulations assumed an unhealthy aspect, and, as his constitution seemed evidently suffering from the long-continued drain, I thought it right to amputate below the knee. The operation was performed very high, just below the knee, on the principle advised by Mr. Teale in amputation of the thigh. The skin of the upper surface of the stump sloughed to a slight extent. During the progress of the case, hemorrhage to an alarming degree occurred from the popliteal artery, and this was secured by Mr. Ward, who laid open the stump to reach it. His progress was satisfactory until inflammation attacked the knee-joint, and a large quantity of fluid was poured out, and which presented itself towards the inner side, as is usually the case. I opened this freely, and let out a large quantity of sero-purulent fluid, by which the patient was relieved. The only additional circumstance I need mention in this case, is the fact that, the opening on the inside of the knee becoming closed, a large abscess has formed in the bursa beneath the tendon of the rectus, which frequently communicates with the joint itself. There is every prospect of cure.

Thus, you perceive, that at the same time I have had four cases under my care, in which I have thought it advisable to open the knee-joint. And I may ask the simple question, why should you fear to open this joint? You may be quite certain of this, that where suppuration has taken place, it is absolutely necessary that you should adopt this procedure, as there is no chance whatever that the pus can be absorbed under the circumstances mentioned in the preceding cases. I think the custom of freely opening the joint is due to the writings and practice of Sir Benjamin Brodie, and I am sure that you cannot commit a more fatal error than to leave patients unrelieved of abscess in the interior of the joint, under the impression that you are likely to add to the mischief already existing by opening so large a joint as that of the knee. Let me give you this piece of advice: if you determine to cut into the joint, let your incision be free, and do not trouble yourself by squeezing the matter out with your hands, but lay a flannel, soaked in warm water, over the part, and allow the cyst itself, by its inherent faculty of contraction, to force out its contents. In most cases, it is desirable to leave the opening patent, and not to trouble yourselves to bring the edges of the wound together by strapping and bandaging, although this practice may sometimes succeed You have seen cases in the hospital where the constitution has been infected with that very fatal blood-poison to which the term pyæmia is given; and, in many of these cases abscesses form in the various joints of the body. In such cases, I would especially advise you to make free incisions into these abscesses, and the result of my experience is that by such treatment many lives are saved.—*Lancet, August* 13, 1859, *p.* 155.

around the femur in rheumatism, you rarely cause much pain; but in acute periostitis such pressure cannot be tolerated for a moment. The conclusion in favour of periostitis will be much strengthened if it be found that the attack of inflammation succeeded an injury.

The treatment commonly recommended in acute periostitis is local depletion with calomel and opium. Just at the onset of an attack, in a superficial bone like the tibia, this treatment may be of service, but in periostitis of a deep-seated bone, or if the inflammation do not speedily subside, such measures are not to be relied on. After matter has formed beneath the membrane, they are worse than useless. They weaken the patient without exerting any influence on the disease. There is then no way of averting serious mischief but by a free incision of the inflamed periosteum.—*Lancet, Sept.* 3, 1859, *p.* 231.

45.—ON PAINFUL CICATRIX, AND IRRITABLE STUMP.

By HENRY HANCOCK, Esq., Senior Surgeon to Charing-Cross Hospital.

[Painful cicatrix occurs for the most part in situations where the skin is naturally in close contact with the periosteum, as over the lower portion of the fibula and inner surface of the tibia. The pain frequently comes on only after the cicatrix is formed, the previous wound not being so.]

This is a point of some practical importance, and led me to pursue the treatment adopted in the following case—viz., "subcutaneous separation of the cicatrix from the periosteum," and the prevention of adhesion again taking place. These cicatrices have usually been dissected out; but the operation has proved very unsatisfactory, the relief being merely temporary, whilst the wound remains open, and being lost when it closes; and we may readily understand why this is the case when we recall the fact, that the wound made in this operation must be filled up by granulations springing from the periosteum or bone, as the case may be,—when we also remember the contraction which takes place in all cicatrices so formed, how the delicate periosteal nerves must be implicated, and how this contracting or contracted cicatrix must be continually dragged upon and irritated by every movement of the limb or muscles of the part. The following case illustrates the foregoing observations:—

Painful Cicatrix.—Mrs. B., when about thirty years of age, suffered from suppression of the catamenia, for which she was on several occasions bled in the leg. After the last bleeding, pain having occurred in the spot, leeches and lotions were employed, but without any beneficial result, the pain being much increased, and very severe. This continued for three years, during which she was treated by most of the first surgeons of the day for disease of the vein. She next

consulted the late Mr. Liston, who at once excised the painful spot. The wound healed, and she remained free from pain for nearly fourteen years, when it returned precisely in the same spot, and continued for several weeks very severe, and not relieved by treatment; there was neither swelling nor redness. Another surgeon of great eminence was then consulted. He proposed to remove the cicatrix, which was done with benefit for sixteen months, when the pain returned. The cicatrix was again removed, but the relief afforded only lasted six months. Removal of the cicatrix was again recommended; but the patient desiring another opinion, Mr. Chapman, of Hounslow, under whose care she was, brought her to me.

Her sufferings at this time were so great that she was willing to undergo anything that held out a probability of cure. She could not sleep at night, and appeared quite worn out with pain. Upon hearing the history of her case, I was struck with the fact, that after the last two excisions she remained free from pain so long only as the resulting wounds were open and unhealed, but that directly the cicatrix was completed the pain returned; and when, upon examination of the part, I found that the skin, or rather the cicatrix, was adherent to the periosteum, and perfectly immovable, I concluded that her sufferings were due to this cause, and that they would not be alleviated until the parts were separated, and the new skin as far as possible placed in the same position as that of the surrounding integument. I, therefore, proposed that the skin should be separated from the periosteum by a subcutaneous incision, and that a reunion should be prevented by moving the skin backwards and forwards from day to day as might be deemed necessary. This was agreed to, and accordingly, assisted by Mr. Chapman, on Sept. 15th, 1857, I performed the operation with the common tenotomy knife, the part cut through being very hard, like cartilage. Mr. Chapman, who attended the case afterwards, informs me that some little inflammation followed, but that it was readily subdued; that the skin was prevented re-adhering, and that up to the present time the patient has remained in good health, and perfectly free from pain.

You will find the same treatment of service in cases of irritable and painful stump after amputation. This malady has been ascribed to various causes, as, for instance, the flaps being made too small in the flap, or the bone being left too long in the circular, operation; retraction of the muscles and soft parts; implication of the nerve in the cicatrix; undue development of the bulb at the cut extremity of the nerve; exfoliation of bone and adhesion of the cicatrix to the bone, &c., &c. Where the integuments have been cut too short, or where there has been undue retraction of the soft parts, you have what is termed a conical stump, which you cannot mistake; where also there is exfoliation of bone, you may reasonably suspect its existence from the swelling and induration of the stump, whilst there will usually be redness and an opening with pouting granulation, marking the track.

to the exfoliating bone; but in other cases there is no sign of suffering for some time after the stump has healed, and, although the pain is almost unbearable, you will frequently be unable to detect anything abnormal either in the touch, colour, or quantity of soft parts. The character of the pain almost always points to implication of the nerve in some way or other, and accordingly operative surgery has been chiefly directed to this point; division of the nerve, excision of the bulb and a portion of the nerve, and secondary amputation being the plans adopted.

Excision of the bulb of the nerve, however, does not always succeed. I have done it myself in some two or three cases, but with only temporary benefit; and from what I have observed, I am inclined to believe that in many instances the suffering is not so much induced by the nerve or its bulb as by the adhesion and connexion of the cicatrix by firm, unyielding cartilaginous structure to the periosteum or bone.

You will observe in the following case that this suffering occurs even though the cicatrix is not in immediate contact with the bone, but attached to it by an intervening mass or band; whilst the skin around the point of cicatrix corresponding to this mass is puckered in, there is a total absence of subcutaneous cellular and adipose tissue, present at other parts of the stump.

Painful Stump.—M. H., aged thirty, admitted into Charing-cross Hospital Nov. 30th, 1858. Had disease of the left knee-joint at ten years of age. At fourteen, the knee, being much swollen and very painful, was punctured, and a considerable quantity of blood escaped, but no matter. At sixteen, the catamenia first appeared; they left her for two years, and then returned, but with irregularity. At seventeen years of age she fell, and so much injured her knee that she went into the Royal Free Hospital, where the leg was amputated. The stump healed rapidly; but accidentally falling upon the floor, she hurt the stump so much that it reopened, and the bone protruded through the wound, which would not heal; the pain was intense, and subsequently about two inches of bone were removed. After this she recovered, and remained well until about four years ago, when she felt as though the limb was entire—as if the blood were rushing to every part below the amputation, accompanied with great pain in the nerves. The pain gradually increased, and ten weeks since it became more violent than ever, and was almost unbearable; so much so, indeed, that she begged me to amputate the leg higher up.

Upon her admission, on the 30th November, I carefully examined the stump, and found that the cicatrix at one point was tied down, as it were, to the end of the bone by a dense band about three-quarters of an inch long, and that any pressure upon this point increased her sufferings to a great degree. The end of the nerve, enlarged into a considerable bulb, could easily be distinguished, attached by this band to the bone also, thus accounting for the pain which she experienced in the course of the nerve. I had upon previous occasions, in other

cases, dissected out these bulbs, but with so little success that I was convinced that the sufferings could not depend so much upon them as was usually supposed; whilst the result of the case which I have just related to you led me to expect that if the cicatrix were released from the bone so as to permit free movement, the patient would be relieved from pain without another amputation. Accordingly, on the 11th December, the cicatrix was separated from the bone by a subcutaneous incision, the connecting medium being so dense as to resemble cartilage. The soft parts were moved gently over the bone for a short time every day until the wound was healed and all trace of tenderness had ceased. The stump, which had previously been puckered and baggy, became round and plump; the pain entirely ceased; and she left the hospital, cured, on the 14th January, 1859.—*Lancet, July* 23, 1859, *p.* 79.

46.—*Simple Extension in Contraction from Burns.*—We lately had the opportunity of observing the treatment of a case of deformity arising from an old burn in a little boy, nine years of age, under Mr. Coote's care at St. Bartholomew's Hospital, which is worthy of notice. It is a plan in use, we believe, at the Orthopædic Hospital, and consists in the proper application of simple extension, perseveringly carried out. The boy was admitted on the 7th of April, with his lips and mouth drawn downwards from a burn in the neck when an infant. The cicatrix possessed the usual characters of hardness and thickening. By suitable appliances the head and chin were kept extended, with the effect of bringing back the lower lips and jaw to their natural position, and getting rid of the extreme deformity which had heretofore existed. The mouth can now be closed.

The effect of extension is to cause the absorption of the adventitious material present in the cicatrix, and thus permit the latter not only to become soft and extended, but permanently to remain so.—*Lancet, Aug.* 13, 1859, *p.* 162.

47.—ON THE USE OF VERATRUM VIRIDE IN SURGICAL FEVER.

By Dr. J. Y. Simpson, Professor of Medicine and Midwifery in the University of Edinburgh.

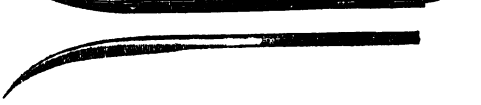
Some of our American brethren have latterly been using extensively, in febrile, inflammatory, and nervous diseases, a new and potent drug belonging to this class, viz., the veratrum viride. Its effects have been described by Dr. Osgood, Dr. Norwood, Dr. Barker, and other practitioners. They tell us that they find that by exhibiting in repeated doses a concentrated tincture of the veratrum viride, they can reduce the pulse and keep it reduced with a certainty and to a degree

which can be effected by no other drug. Dr. Barker and others have published cases where they have thus brought down the febrile pulse in a few hours from 140 beats to 80, 60, or less in the minute, and kept it at will at this lower standard. It is a drug altogether which is certainly entitled to the strong attention of European practitioners. And it is not merely an arterial sedative. It is at the same time apparently a powerful depurant, stimulating the action of the skin, kidneys, and secretory functions generally. It has been successfully used as a depurant in acute gout and rheumatism, instead of colchicum. The veratrum viride is an American plant; but I think, from what I have seen, that we may fulfil the same therapeutic indications with the species which is in all our European pharmacopœias—the veratrum album. As the different species of cinchonas depend for their therapeutical effects in ague, &c., upon their all containing one and the same principle, namely, quinine, so in all likelihood the different species of veratra depend for their therapeutical effects upon a principle common to all members of the genus, namely, *veratrine*. Many of the old Greek physicians trusted often in chronic diseases, as Aretæus, Oribasius and others tell us, to a course of hellebore after they had failed in curing their patients by other plans of treatment. The researches of Dr. Adams leave little or no doubt that the white hellebore preparations of the Greeks were derived from the veratrum album. It will be curious if, in the cyclical changes to which medicine is even subject, we now turn back after 2000 years to the ancient "helleborism," or hellebore cure of Hippocrates and his successors. They had recourse to it, however, principally in chronic affections, as insanity, epilepsy, neuralgias, dropsies, &c. American practitioners have, on the contrary, been using the veratrum viride, or American hellebore, as Dr. Wood terms it, principally in acute diseases, as in pneumonia and other forms of inflammation, in puerperal and other forms of fever. Let me allude to one other drug before leaving the present indication. Chloroform when given in full doses, either by inhalation or by swallowing, depresses and brings down the rate of the pulse. In any surgical patient operated on under a complete dose of this drug, you will find the pulse sunk from 90 or 80 to 70, 60, or less. I have taken advantage of this action of chloroform in some instances of disease. The first case I used it in was the following:—A lady, whom I saw with Dr. Scott, of Musselburgh was attacked with peritonitis after abortion. The peritonitis was so very acute and severe, and all the accompanying symptoms so very formidable, with a weak and scarcely perceptible pulse, racing above 150, that I had little or no hopes whatever of the patient surviving. At her own request, to relieve her from her great abdominal pain, she was placed under the influence of chloroform; and when so, Dr. Scott and I found the pulse sank down to 100 or less, and became stronger and steadier. We found further, that as long as the action of the chloroform continued, the pulse continued thus greatly lowered in rate, and

improved in power. Hence we agreed to keep her for a time continuously under chloroform; and in consequence of the evident good results, she was retained upwards of sixty consecutive hours under its influence. By the end of that time the great abdominal tenderness and tympanitis were almost entirely reduced, and the patient in an infinitely more satisfactory and hopeful state than when she first breathed the chloroform. The pulse never rose again to any very high rate; and all danger was over. But you cannot obtain the same beneficial and sedative influence upon the excitement of the heart from chloroform in all patients; or to state the fact more correctly, you will find it difficult in some, and impossible in others, to regulate its dose so as to keep up its continuous depressing action on the heart without sickness, vomiting, and other symptoms, coming on in such severity as to force you to leave off its use and have recourse to other means and other indications of treatment.

Dr. Barker, in some of his interesting published observations on the veratrum viride, remarks, that while it will most surely reduce the quickened pulse of inflammation and irritation, "its use is not incompatible with that of stimulants. Experience has abundantly demonstrated the truth of this apparent paradox. One patient who recovered took, every hour for two days, one ounce of brandy, and three to ten drops of the tincture of veratrum viride, the quantity of the latter being determined by the frequency of the pulse, which was never allowed to rise above 80 per minute, although it sometimes fell down to 40. In another case the veratrum viride did not seem to produce any effect on the pulse, which remained steadily above 130, until the condition of the patient was such that I decided to give brandy. After the first ounce was given, it fell to 108; after the second to 86. Continuing the brandy, the veratrum viride was suspended for a few hours, and the pulse again rose to 130. After this," adds Dr. Barker, "it was curious to observe the fact that, if either agent was suspended, the pulse would rapidly increase in frequency, while under the combined influence of the two, it was kept below 80 per minute. —*Med. Times and Gazette, May* 21, 1859, *p.* 516.

48.—*Needle for Metallic Sutures.*—[The needle below described is well adapted for employment with metallic sutures, and is moreover simple and inexpensive.]



It resembles in shape the ordinary sewing needle, but is flattened and grooved for about a third of its length. In the centre of the grooved portion are drilled two round holes (about a quarter of an inch apart) of sufficient bore to admit the passage of the wire intended to be used. In arming the needle, the wire is first passed through the hole at the greater distance from the point, then carried to the other, similarly inserted, and the end, which ought not to exceed the eighth of an inch in length, turned backwards, and pressed into the groove.

When threaded in this way, no portion of the wire lies above the plane of the instrument, so that no obstruction is offered to its passage through the integument, and the wound inflicted retains its incised character.

In the ordinary sewing needle, the size and form of the eye is such that the metallic suture—which of necessity, is doubled for a short distance—is very apt to become twisted and distorted, and thus prevent its easy application.

Two ingenious modifications have been devised by Mr. Lister, of Edinburgh, and Mr. Murray; but, I believe the one here described—which is made by Mr. Weiss, of the Strand, and Mr. Matthews, of Portugal-street, at trifling cost—will be found of general value, but especially when dealing with more than usually delicate and elastic tissues.—*Lancet, June* 4, 1859, *p.* 572.

ORGANS OF CIRCULATION.

49.—CASES OF POPLITEAL ANEURISM SUCCESSFULLY TREATED BY FLEXION OF THE KNEE-JOINT.

By Ernest Hart, Esq., Surgeon to the West London Hospital, and Alexander Shaw, Esq., Surgeon to the Middlesex Hospital.

(Communicated to the Royal Medical and Chirurgical Society.)

Mr. Hart had brought the case under the notice of the Fellows of the Royal Medical and Chirurgical Society, under the impression that they might be interested in the successful treatment of so formidable a disease as popliteal aneurism by the simple flexion of the knee-joint.

J. S——, aged forty-one years, consulted him in September, 1858, having a popliteal aneurism in the right ham. It was globular, of the size of a small apple, and situated at the lower and outer part of the popliteal space. It had a full beat, but was not very near the surface. Placing the patient on the sofa, and baring the leg in order to make a careful examination of the tumour, Mr. Hart found that its pulsation was affected by the angle at which the leg was bent upon the thigh, and that when very complete flexion was effected, its thrill almost wholly ceased. Concluding that in this position the course of

the blood through the tumour was greatly retarded, he conceived the hope of effecting the cure of the aneurism by the deposition of active clots, if the leg could be retained for a sufficient length of time in the bent position. After a week's preliminary rest, treatment was commenced by bandaging the leg from the foot to the knee (not covering the tumour), thoroughly flexing the leg on the thigh, and retaining it in that position by the application of a stout roller. He was a thin, wiry man, and the flexion produced no inconvenience to him at the time. He passed a better night than during the previous week, when severe pain had been present in the aneurismal sac. What pain or annoyance was complained of during the treatment was referred to the knee-cap, but it was very trifling, and "barely deserving to be called pain." The tumour was examined on the morning of the third day (about forty hours after flexion was enforced), and considerable solidification had occurred. On the fifth day, the tumour was hard and solid, and neither pulsation nor thrill could be detected. The leg was lightly attached to the thigh at a right angle. On the seventh day, the patient was allowed to move about, the foot being slung. On the twelfth day, the leg was completely straightened, and the patient walked on it with ease, limping from stiffness at the knee-joint consequent upon confinement. Six weeks subsequently, the tumour was hard and firm, and much smaller. After three months, it was barely perceptible, and there was pulsation in that part of the artery. The patient was seen at various stages by the author's friends, Mr. White Cooper, Mr. Coulson, Mr. Holmes, of St. George's Hospital, Mr. Flower, of Middlesex Hospital, and Mr. Buxton Shillitoe.

The treatment by flexion in this case was perfectly and immediately successful. It was unattended with any difficulties, it offered no inconveniences, and was not followed by any other than satisfactory results. The case, however, was one particularly well suited for the essay of such a plan of treatment. The patient was not stout, which renders flexion difficult; nor was he aged, which makes it painful. The tumour was of average size and of average prominence; when the knee was bent, the aneurismal sac was below the line of flexure. These he believed to be all favourable circumstances. Cure was evidently effected in this method by the retardation of the current of blood, and the consequent deposition of active clots in the sac—the only manner in which satisfactory cures could be anticipated. This result was probably effected by the combined influences of pressure on the sac by the surrounding fascial and muscular tissues, and acute flexion of the artery. In so far as it was due to pressure, it appeared to be a return to the old method of treatment by direct pressure, but was free from the inconveniences of the screw and pad, which were open to the reproach of occasioning gangrene of the skin, rupture of the sac, and other accidents. Its simplicity and its success in this case appeared to strongly recommend it for further trial. it were

not always successful, there was not any other method free from the same objection; and there seemed reason to hope that the principle might admit of efficient application to a number of cases in which aneurismal tumours were developed opposite to the joints of the limbs.

[In the next case, communicated by Mr. Shaw, the same method of treatment pursued in the previous case was adopted.]

The patient, aged thirty, first perceived a pulsating tumour in the left ham a week before his admission into the Middlesex Hospital. It was of the size of a lemon, occupied the centre of the popliteal space; was easily compressed; the pulsation was strong, and there were other signs of its being a recent aneurism. On December 1st, the knee was secured in the bent position by a band brought round the foot and thigh, and fixed near the hip. The immediate effect of the flexion was that the patient ceased to feel the beating of the tumour, and that on inserting the oiled finger into the flexure behind the knee no pulsation could be discerned. On the fourth day, when the limb was unbound, the tumour was found to have lost about a third of its original size; its walls were thicker and denser, the force of the pulsation was considerably diminished, and the sac had receded more deeply into the popliteal cavity. Gradual improvement continued to take place. Between the third and fourth week from the commencement of the treatment the sac had become greatly reduced in size; its walls appeared nearly solid, and the pulsation was so faint that it was expected at each day's visit to find it extinct. The treatment was varied by occasionally undoing the strap, which confined the knee, for several hours together; but, owing to the stiffness caused by the long continuance of the flexion, the position of the joint was not much altered by the relaxation. It was not till the thirty-eighth day that the pulsation in the tumour altogether ceased. The sac was at that time about the size of a walnut. The patient gradually recovered the power of extending the joint. On the fiftieth day he could walk with only a slight halt, and on the fifty-sixth day he was discharged. During the first ten days the patient complained of the pain, as well as the irksomeness, of keeping his knee constantly bent; and for a slight swelling of the joint a lead lotion was applied. Afterwards he made light of the inconvenience, and he never at any time asked to have the belt relaxed.

At the close of the case, the author offered a few brief remarks on the principle on which the cure was effected, and, in illustration, added the observation that, by extreme flexion of the knee-joint of a sound limb, the force of the current of blood through the popliteal artery can be weakened to such a degree as to cause stoppage of pulsation in the tibial arteries.

Mr. Fergusson eulogised the papers read, and said he regarded the proceeding described by Mr. Hart as a valuable addition to the prac-

tice of surgery. He spoke of the value of pressure generally in the treatment of aneurism, and also of "manipulation"—modes of treatment which he thought would set aside, in many instances, the necessity for the knife. In the plan pursued in the cases before the Society, there might be failures, but this was no reason why we should discard the operation, but should rather encourage us to persevere to determine the real value of the proceeding. The plan was not altogether novel, for it had been tried three or four years since in King's College Hospital. One of his house-surgeons had ascertained, in a case of popliteal aneurism, that when the leg was flexed upon the thigh, the pulsation in the tumour ceased. The aneurism was of the size of the fist, and was treated by pressure in the groin, and by flexure of the leg upon the thigh. This was persevered in for some time, but without benefit. The man, being impatient of treatment, left the hospital, and died of some other disease. To show the influence of position in certain cases of aneurism, he related a case of that disease in the popliteal space, in which the employment of pressure gave encouraging, but tardy, results. It was found in this case that on extending the leg to its full degree, after the employment of pressure, all pulsation in the tumour ceased.

Mr. Birkett briefly referred to three cases of aneurism treated by pressure which had come under his notice in Guy's Hospital. In one case, ordinary pressure in the groin was applied; then pressure by flexion. Neither did good; but it must be admitted that they were not fairly tried. The femoral artery was afterwards tied, and the patient recovered. In the second case ordinary pressure was applied at first with success; but suddenly the tumour became much enlarged, the femoral was tied, and the patient did well. In the third case, the patient, a man, had an aneurism in the right popliteal space. Pressure was tried, and in fourteen days he appeared well. The tumour contracted, and felt like a small hard ball. Flexion was then resorted to, but not persevered in, and ordinary pressure was again employed. The aneurism, however, gave way, and the femoral had to be tied. The man subsequently had a small aneurism in the left popliteal space; he would not submit to flexion, so the femoral vessel was secured.

Mr. Savory said that these cases were especially interesting and instructive in their relation to the physiology of the blood-vessels. It was familiarly known that a transverse wound of the artery gaped widely, and that when an artery was completely divided the ends retracted. Yet these important facts had seldom received more than a passing notice. They had never been explained. To what was this retraction due? The muscular tissue was in no way concerned in it, for it occurred at a long period after death, as well as during life. Neither would elasticity alone explain it. Another condition was required, and that was tension. The arteries were elastic tubes, always tense; so that, when divided, by no management of posture or

position could the retracted ends be brought into apposition. The extent of their retraction was a measure, then, not of their elasticity, but of their tension. This constant state of tension was obviously connected with their purpose; by it their patency, under every variety of movement and position, was secured. But this rule had its exceptions, and these were to be found at the knee and elbow joints. At these parts, when an artery was divided, extreme flexion would bring their ends into apposition; but in this position, and for this very reason, the course of the vessel was interrupted; the course of the blood through it was impeded; the pulse ceased in the limb beyond. Thus he conceived was explained the principles upon which the cure of aneurism by this means was accomplished. It was not due to pressure in the sense in which that term had been employed. It was due to the fact that the circulation through the artery at a short distance on the distal side of the sac was arrested; so that, as far as the principle was concerned, it would probably succeed, whatever part of the popliteal space the aneurism occupied. Now, in connexion with this interesting fact—the arrest of the current through the artery by extreme flexion of the limb—Mr. Nunn, in some observations on the arrangement of the arteries of the limbs, recently published, had alluded to the remarkably free anastomosis which existed around these joints. They were clearly for the purpose, as he said, of compensating for the occasional interruption through the main channel. He, (Mr. Savory) added, that this plan of treatment appeared free from one grave objection to the ordinary treatment by compression—namely, of interfering with the venous circulation. For although in extreme flexion the current through the main vein was interrupted also, yet here there was also an abundant superficial venous anastomosis around. The veins, like the arteries, were elastic, and, to say the least, were equally tense.—*Lancet, May* 7, 1859, *p.* 462.

50.—ANEURISM OF THE POPLITEAL ARTERY SUCCESSFULLY TREATED BY FLEXION AND COMPRESSION.

By Oliver Pemberton, Esq., Surgeon to the General Hospital, and Lecturer on Surgical Pathology at Sydenham College, Birmingham.

[In the following case both flexion and compression were combined in the treatment. Weiss's compressor was used.]

On the 16th of May, (having made arrangements by means of relays of dressers that he should never be left for eight-and-forty-hours,) at twelve o'clock at noon, I fixed Weiss's compressor, and applied pressure by means of the lower pad to the middle third of the artery; at the same time, turning a bandage around the ankle-joint, I bent the leg as far as it would admit without occasioning pain, and fixed it firmly in this position by carrying the bandage around the pelvis.

The effect of this combination of flexion and compression was, that

the pulsation in the aneurism was reduced to a mere wave, varying from time to time, as the compressing pad was adjusted by the attendant.

Two hours after the commencement of this treatment he became very restless, and complained of a burning pain in the aneurism and down the shaft of the tibia; and, despite the permission to smoke, it was with much difficulty he could be kept quiet. Forty drops of the sedative solution of opium were given at five o'clock with good effect.

Towards midnight, between eleven and twelve hours after the commencement of the treatment, he became much quieter, and slept frequently. The pressure exercised by the tourniquet was comparatively slight, the aneurismal tumour having become hard and perfectly free from pulsation. Not the least movement of the leg from the state of flexion had, however, been permitted. There was considerable swelling of the knee, leg, and foot, but he did not complain of much pain. It was remarkable to observe the vehement pulsation of the superficial arteries after the arrest of the circulation through the tumour, especially about the neighbourhood of the internal articular vessels. During the night, the pressure on the artery was removed, from time to time, from the lower to the upper pad; but the amount exercised was merely nominal, as it was quite evident that no blood had passed through the aneurismal tumour after the first twelve hours. A drachm of the sedative solution of opium was administered towards morning, to the great comfort of the patient, who was calm and placid, chatting with his watchers and smoking in the interval of his slumbers.

Throughout the day of the 17th, the same regulations were carried out, without the least deviation, and no annoyance was complained of from the position of the knee.

On the 18th, at twelve o'clock, forty-eight hours from the commencement of the treatment, I removed the compressor, and discontinued the supervision of the dressers. I made no relaxation whatever in the flexion of the knee. There was considerable swelling of the extremity, but no diminution in warmth. I had it carefully wrapped in cotton wool, and warmly covered up with flannel. There was good pulsation in the malleolar vessels, and not the least pulsation to be detected in the aneurism, or bruit along the course of the femoral artery. The articular vessels pulsated strongly.

On the 19th, the flexed position was slightly relaxed, and the entire limb rolled with flannel.

24th. Further liberty was allowed. The tumour has lost its lateral bulk, and begins to contract. The swelling of the leg is subsiding.

28th. Contraction going on in the aneurism. The bandage between the ankle and pelvis still more relaxed, so as to permit of the limb being straightened to the fullest extent the patient desired, without occasioning a sense of pain.

June 8th. All bandages confining the limb were removed. The

aneurismal tumour was firmly strapped with adhesive plaster, and the entire limb accurately rolled.

20th. He was permitted to get about on crutches. The heel of the affected limb cannot touch the ground to bear weight, but he gets about very fairly, and is entirely free from pain.

In the course of the next ten days, much of the stiffness disappeared and he soon discarded his crutches, the limb having regained its straight condition, though somewhat larger than its fellow.

Aug. 15th. The patient has been retained in hospital during the last two months, simply for the purpose of watching the gradual dispersion of the aneurismal sac. He walks with ease, and has no stiffness whatever in the knee-joint.

Viewing the contour of the popliteal spaces from behind, the remains of the sac are plainly marked,; its prominence contrasting strongly with the absence of a corresponding swelling in the parallel healthy space, so clearly defined by those slender, delicate, and distinct muscles peculiar to this race of people. It now occupies pretty much the centre of the space, extending, perhaps, somewhat more on the outer than on the inner side. It is very firm and hard, and measures in either diameter, even now, some three inches; so that a good idea can be formed of the once formidable dimensions of the disease.

16th. Professor Syme, on his way through Birmingham to Edinburgh, whilst visiting the hospital with me, examined the remains of the aneurism, and expressed himself as thoroughly satisfied with the solidity of that which yet constituted the sac, and at the same time conveyed to me his approval of the mode of treatment by flexion that had been adopted in the present instance.

For a long time past, I have been in the habit of applying flexion and pressure in combination in cases of wounds of the palmar arteries. The wound of the vessel has been compressed by a firm roller; the fingers have been laid over this in the flexed position, and maintained there; the hand has been flexed on the forearm; the forearm on the upper arm; movement of the entire extremity has been further rendered impossible by the application of a roller from wrist to shoulder; and the consequence has been, that the happiest results have followed the treatment adopted.

It was this experience that led me to adopt the union of the two methods in the case above narrated. I had not then read the cases as communicated by Mr. Ernest Hart and Mr. Alexander Shaw to the Royal Medical and Chirurgical Society, and published in the Lancet of May 7th, 1859, in which these gentlemen had succeeded in effecting a cure of two cases of popliteal aneurism by the treatment of continued flexion alone. Had I done so, I should have felt inclined to have resorted to flexion, unaided by the assistance of the compressor. As it is, I think that the case is the first, so far as I am aware, in which the combination has been made use of from the first; and the

success which has attended its adoption has been such as to lead me to the conclusion, that we may possess in it a means of treatment worthy of attentive consideration. I consider, however, that to flexion was the cure mainly due to this instance, as the use of the compressor was little more than an adjunct—at hand, to be called for in case of necessity arising. This conclusion is justified when it is considered that the pad of the compressor was never applied with severity, and that the amount of pressure exercised by it at first was decreased, instead of being gradually increased in order to control the circulation through the aneurism.

If we review the state of the tumour during the twelve hours from the commencement of the treatment, I think this conclusion will become inevitable. From the first, absolute flexion was established; compression was but partial. The circulation was reduced to a mere wave, which disappeared, and never reappeared after the first eleven hours. The compression was never, during the whole of this period, or subsequently, changed in its character; whilst the flexion was maintained unaltered in the least degree for the first three days, and then only slightly relaxed for the ensuing five.

In the case narrated by Mr. Ernest Hart, the pulsation terminated on the fifth day. In Mr. Shaw's case, it was not until the thirty-eighth day that the pulsation in the tumour altogether ceased. In neither of these cases was the aneurism half as large as in the case I have described, and yet there was no pulsation after the first eleven hours. The continued flexion of the knee did not appear to cause suffering, but there was considerable difficulty in recovering the straight position of the limb, which is not to be wondered at, when it is considered that for twenty days it was more or less retained in the flexed position. In a smaller aneurism, so long a maintenance of this position need not be called for; but in one of dimensions so considerable as this, there cannot be too great a care exercised to secure the solidity of the contents of the sac until their permanent removal becomes no longer a question of any anxiety or doubt.

I do not think that the position of the aneurismal tumour in the upper or lower course of the popliteal artery will be likely to affect this treatment by flexion. Extreme flexion will, in either case, arrest the circulation with equal safety, as the anastomosis of vessels is quite as abundant above as below the knee; indeed, we may attribute much of the success which attends the cure of popliteal aneurism to the varied character of the communications established, in the case of the obliteration of that trunk, between the articular vessels and the muscular arteries in both thigh and leg.

An unfortunate issue, in one respect, to the reputation of this treatment has occurred in the practice of Mr. Moore, of the Middlesex Hospital. A large aneurism of the popliteal artery—but not a larger one, judging from the description, than the one I have recorded—after having been submitted to incomplete flexure, as well as pres-

sure, for about twelve days, burst through the ligamentum posticum into the knee-joint. Happily, this serious complication did not prevent the patient's recovery, for the artery was tied, the aneurism was cured, and the knee-joint recovered its usefulness. The opening in the artery was here supposed to have been situated on its anterior aspect, or that immediately contiguous to the ligament, so that extreme flexion would have a tendency to relax the artery behind the aneurismal tumour, in opposition to stretching it over where the opening might be situated posteriorly. In such a case, it is inferred that the treatment by flexion would not be indicated. That there will be cases of popliteal aneurism which neither pressure nor flexion, nor the two in combination, will cure, every one will admit; but supposing we were able to discriminate the situation with any degree of accuracy of the primary opening in the artery, must not, after all, the favourable issue of the case depend entirely on the ability possessed by the treatment applied to absolutely, sooner or later, restrain the current of blood flowing through the aneurismal tumour? Mr. Moore's patient seems never to have borne either flexion or compression with any degree of satisfaction either to himself or his attendant; on the contrary, the disease went on increasing rapidly, so as to necessitate the operation at length so successfully carried out.

This mode of treatment by flexion may not be so likely to succeed in mature subjects as in young adults; and, unquestionably, the flexibility of the muscles and joints in all must be a first consideration in its selection, as we are not likely to meet with materials so elastic to work on in the frames of even our English labourers as those possessed by my lithesome Asiatic, whose powers of genuflexion so eminently contributed to his cure. It is also not unworthy of remark that the continued indulgence in smoking, combined with the administration of powerful doses of opium, appear to have contributed not a little to the favourable issue in this instance.—*Lancet, Sept.* 3, 1859, *p.* 232.

51.—*Hemorrhage from the Superficial Palmar Arch: Cure by Flexion of the Forearm.* (Under the Care of H. C. JOHNSON, Esq., Surgeon to St. George's Hospital.)—A short time ago, a paper was read at the Royal Medical and Chirurgical Society by a pupil of the London Hospital, in which the very simple plan of controlling hemorrhage from the vessels of the palm by flexing the forearm, so as to make pressure upon the brachial artery in the bend of the elbow, was advocated, and a successful instance of its adoption was recorded. This plan, although not uniformly successful, is so easy, and interferes so little with other means that may be adopted, that it deserves to be widely known, especially as the accident is so common, and frequently occurs in country practice, where few resources are at hand. We therefore have much pleasure in citing the following instance of its success.

Thomas Cross, butler, was admitted on Aug. 1st, with a punctured wound on the palmar surface of the right hand, just over the region of the superficial palmar arch. At the time of admission, there was free hemorrhage from the wound; but this was restrained by pressure on the radial artery. The hemorrhage ceased after the radial artery had been compressed for a short time; but, on removing a clot which had formed in the wound, the bleeding again commenced with great vigour.

The history was this. The man was packing some wine, and one of the bottles broke, and a piece of glass entered the hand at the spot above named. On finding the hemorrhage recur, Mr. Vining determined to tie the ends of the bleeding vessel; but, just as he was about to do so, Mr. Johnson came into the ward, and advised him to try flexion of the arm, leaving orders that, if the bleeding commenced again, he was to cut down and tie the vessel. The forearm was flexed upon the arm, and a small pad of dry lint was put upon the wound, with very slight pressure. The pulsation in the radial artery was much diminished, but not stopped. In the evening the patient complained much of the discomfort of keeping the arm in one position. This was altered a little, but the arm was still kept flexed.

Aug. 2nd. There has been scarcely any bleeding since the arm has been flexed. He complains of a good deal of pain in the hand to-day, and also of numbness in the fingers; and he also complains of some pain in a lacerated wound of the arm, which he received at the same time.

Aug. 3rd. No more bleeding has occurred. The arm is still kept flexed.

Aug. 4th. The pad of lint was removed from the wound to-day, which has almost entirely healed by the first intention.

Aug. 6th. All pressure was taken off to-day, except that the forearm was still flexed, in order to raise the hand.

Aug. 9th. He complains of pain over the wound to-day, when pressure is made; and the pain also extends up the fingers. This probably depends upon some injury to the nerve. The wound, as far as any chance of hemorrhage is concerned, may be reported cured.—*Brit. Med. Journal, Aug.* 20, 1859, *p.* 665.

52.—*Dr. Warren's Styptic in Internal Hemorrhages.*—Dr. Cook reported to the King's County Medical Society that he had used the styptic recommended by Dr. Warren, of New York, in almost every variety of hemorrhage, and has hardly known it fail in hemoptysis or uterine hemorrhage. It consists of sulphuric acid, ʒv.; spt. turpentine, alcohol, ää ʒij. The turpentine is slowly mixed with the acid, and, the alcohol having then been added, the mixture is put into a stoppered phial. The dose is 40 drops rubbed up with sugar, and given in a teacupful of water, a second dose being given one hour after the first, and a third two hours after the second.—*Med. Times and Gazette, Oct.* 1, 1859, *p.* 342.

ALIMENTARY CANAL.

53.—ON THE RADICAL CURE OF HERNIA: WITH AN ACCOUNT OF AN IMPROVED INSTRUMENT, AND NOTES OF FORTY CASES.

By Redfern Davies, Esq., Surgeon to the Birmingham Workhouse Infirmary.

[In cases of scrotal and femoral hernia, where the rings are very large and relaxed, the operation (Wützer's instrument being used) is sometimes unsuccessful, and has to be repeated. The cause of failure is not any defect in the theory of Wützer's method, but to a defect in his instrument. The author suggests the accompanying mechanical improvements.]

Upon examining a case of scrotal rupture in which the operation for the radical cure has failed (supposing, of course, that it has been properly managed, together with the proper after-treatment), the rings and canal will be found to be obliterated probably for some three-fourths of its extent, or there may only remain an aperture which will with difficulty admit a crowquill; and thus, though the patient may be greatly benefitted, and with the aid of a truss resume his duties, a radical cure has not been effected.

That portion of the canal and rings which have been blocked up is invariably that which is nearest the abdominal walls. "The gut slips down behind the plug" are the terms in which both surgeons and patients express the mishap which has occurred, and the reasons for this, I believe, are as follows:—

The anterior or superior layer of the invaginated integument is subjected to not only the pressure of the wooden plug to keep it in apposition with the opposed surface of the rings and canal, but also to the direct pressure of the compressor. The compressor exerts its influence exclusively upon the parts included between it and the upper surface of the said wooden plug, and in no wise affects the posterior parts, viz., the posterior layer of invaginated integument and posterior surface of canal and ring, whose only chance of being kept in apposition depends upon the accuracy with which the plug fits the canal, &c., as a whole.

The floor of the canal, &c., especially where the tissues are lax, as generally occurs in cases of old and large ruptures, does not present in the same manner an opposing resistance to the wooden plug as does the compressor, and thus should the two former be not very accurately adapted the one to the other, adhesion cannot even be expected to occur.

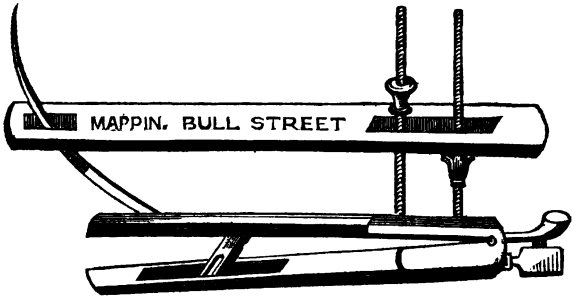
The mouth, or internal opening of the canal, is funnel-shaped, with the posterior surface the more sloped. Consequently, if there be any weak point, it will be there, and it is sure to receive all the shocks of the gut during the process of cure.

Besides it is evident that a cylinder, even closely applied to the rest of the extent of the canal, cannot fill up its funnel-shaped mouth; but must leave an interspace, which will be on the posterior surface.

And, again, it is not always practicable to introduce to a sufficient extent a solid plug, which would best fit the internal ring, by reason of the resistance of the other structures to its passage, besides entailing an endless variety of such plugs.

By the adoption, however, of the principle I now propose, viz. a plug, whose lower half is capable of expanding, these difficulties are severally overcome.

A glance at the diagram will render its application at once evident: it will be seen that by turning the handle and thus causing the lower half of the plug to expand, that the pressure upon the parts included between the upper portion of the plug and the compressor, is left in exactly the same condition and relations as is the usual instrument,



but that a force is exerted upon the posterior portions of the invaginated integument, canal and rings, which it gently, but firmly, retains in complete apposition one with the other.

By reason of the greatest point in its expansion being at the extremity of the instrument, and gradually tapering, two objects are accomplished; first, the funnel-shaped mouth, and the internal opening, is filled with a plug, whose sides are inclined towards its own—the invaginated integument being, as it were, modelled upon it; and, secondly, the rest of the canal is at the same time subjected to no undue pressure.

The principle adopted by Mr. Spencer Wells is likewise made available, viz. having the transverse diameter of the instrument very much greater than the antero-posterior, whereby the shape of the ring is altered, it being converted into a mere chink, and thus affording an additional security against descent of the gut; and so leaving as

small as possible an amount of space between the opposed surfaces of the *doigt de gant* to fill up when the instrument is removed. A thin India-rubber finger-stall caps the end of the instrument, preventing any soft parts getting between the blades.

[The author then gives a table of forty cases, (not including his more recent ones). Of these thirty-seven were cured, five requiring the operation to be repeated. Only two were complete failures, and of these one was owing to supervention of small pox.]—*Med. Times and Gazette, Aug.* 6, 1859, *p.* 128.

54.—MR. WOOD'S OPERATION FOR THE RADICAL CURE OF HERNIA.

[The patient was a young man, aged 20. The hernia was scrotal, on the left side, and of moderate size.]

The operation was conducted as follows:

The hair having been previously shaved from the left side of the pubes and scrotum, the patient was placed under the influence of chloroform. An incision about half-an-inch in length was then made through the skin of the scrotum, 1½ inches below the pubic spine over the cord, by means of a small tenotomy knife. The skin was then separated from the subjacent fascia, for about an inch around the incision—sufficiently far to enable the fascia to be invaginated without any of the skin—then the fascia was carried up before the forefinger of the left hand into the inguinal canal, where all the different structures can be distinctly felt. The arched border of the internal oblique muscle was then felt for, and the finger carried behind it upwards and towards the linea alba; then a strong curved needle, about 4 inches in length, and fixed firmly into a handle, was passed along the inner surface of the finger with the concavity directed forwards—this was made to perforate the conjoined tendon close to the internal ring. The skin was now drawn upwards and towards the mesial line, so as to bring the external puncture nearer to the point where the second thread has to be passed, and the needle was then pushed through the integument and threaded. The needle was next withdrawn, leaving one end of the thread hanging out of the puncture. The finger was then carried behind the external pillar of the ring, the spermatic cord felt for, and pushed backwards and downwards; the needle was guided by the finger behind the external pillar, and made to perforate Poupart's ligament, and then to appear externally at the upper puncture by moving the skin towards the point; a loop of thread was left there, and the needle withdrawn. The finger was again passed behind the internal pillar, and the needle again made to perforate the internal pillar, the conjoined tendon and triangular ligament half-an-inch above the pubis. The point was brought out

at the same aperture in the skin, and then withdrawn, leaving the end of the thread externally. The two ends of the thread which passed through the conjoined tendon were brought over towards the external pillar, and the loop which passed through Poupart's ligament brought over to the opposite side. A boxwood pad, cylindrical, three inches long by $\frac{3}{4}$-inch in diameter, was placed over the external ring in the direction of its long axis, and the crossed threads were tied over the pad. The effect of this was to bring the two pillars and the sides of the canal into apposition, as might be distinctly felt by passing the finger into the opening first made. Lint, a stout pad, and a spica bandage were applied, and the patient was removed to bed.

The effects of this operation are, by approximating the sides of the canal in its whole length, to obliterate the portion which transmits the bowel. The ligatures and pressure which are applied are sufficient to excite inflammation enough to close the canal so that the hernia cannot return. After some days varicocele often appears in the cord, on account of the pressure to which it is subjected from the thickening of the structures. This is considered a favourable sign, as showing sufficient action to be set up; it generally subsides in a few days. Mr. Wood has operated on nine cases, all of which have been successful. The first (fifteen months ago) had a severe attack of bronchitis a few days after the operation; but the hernia did not come down in spite of the cough, and the patient now does heavy work without truss. Another patient had at different times worn thirty trusses, had had the hernia three times strangulated, he had also been operated upon for radical cure by Wützer's method; but the hernia had come down again shortly after the operation. Mr. Wood lately performed his operation on him on board the Dreadnought, and he is now perfectly cured. As a proof of the cure, he had sent his son to Mr. Wood to be operated on in the same manner. In one of the last cases, the patient (who showed himself to-day at the operating theatre) was out of bed in a fortnight, and discharged cured in three weeks. Yesterday he sent in great alarm for Mr. Wood, as he thought the hernia had come down. Mr. Wood went directly to him, and found that it was a varicocele caused by pressure of the contracting strictures on the cord, as occurred in the first case operated on. This is considered to be rather an advantage, as indicating a sufficient amount of pressure in the canal.

In some clinical remarks made after the conclusion of the operation, Mr. Wood stated he considered his method of procedure to possess the following advantages over that of Wützer:—In Wützer's, the skin and subjacent tissues are invaginated and kept in their place by a plug in the canal, and a needle passed through the sac and integuments, very little action is set up, and when the plug is withdrawn, the elasticity of the skin draws down the invaginated portion by degrees, as the adhesions are not sufficiently extensive or strong enough to hold it. The consequence is, that the rupture returns; or else, as

the upper portion of the sac only is subjected to pressure by the instrument, if adhesion is obtained it is only in the upper part; and the lower and posterior part, which is the weakest, is subject to the pressure from within as soon as the plug is withdrawn, and a fresh hernia forms in the posterior fold of the invaginated sac. We believe, however, that this only occurs to inexperienced operators. In Mr. Wood's operation, the fascia only is invaginated, and the skin does not tend to pull it back again, as it is dissected from it. Moreover, the lower wound almost always heals by first intention, and so the skin even helps to keep the fascia in its place, as it adheres to it lower than formerly. The ring also, instead of being further dilated by the invaginated skin and plug, is really restored to its normal dimensions or even lessened, and so prevents the hernia from returning. In Wützer's the instrument has to be worn some two or three months. In Mr. Wood's the ligatures and pad are generally removed on the third or fourth day. The old sailor who has been subjected to both operations, says that Wützer's was far more painful than the other; and it will be seen that it takes a longer time to complete the cure. Again, Mr. Wood's is applicable to all cases of hernia, large and small, direct and oblique, which is not the case with Wützer's.—*Med. Times and Gazette, June* 25, 1859, *p.* 652.

55.—ON THE FORMATION OF AN ARTIFICIAL ANUS.

By Dr. C. Th. Meier, Physician to the Bellevue Hospital, N. Y.

[In the former mode of operating in these cases, viz., dissecting down to the intestine and the nsimply making an incision into it, the fœcal matter always comes in contact with the surrounding tissues and produces irritation and fatal consequences, or the wound in the intestine contracts, and requires constant dilatation. In 1835, Amussat first recommended that the intestine should be brought down to the perineum, opened, and after the discharge of the meconium, that the mucous membrane of the intestine should be attached to the borders of the perineal incision by means of interrupted sutures. The writer then recommends the following mode of operating in these cases, which we give in detail.]

After the introduction of a small silver catheter, to be kept in the bladder as a guide during the operation, and, in female infants, of a good-sized probe in the vagina, a sufficiently long longitudinal incision is to be made in the median line of the perineum, beginning at the posterior portion of the scrotum; or, in female infants, behind the posterior commissure, and terminating at the os coccygis. Then the incision is to be continued through the cellular tissue and the perineal muscles. The pelvic fascia is then incised; the finger and the handle of the scalpel will then be sufficient to clear the way along the os

sacrum to the promontory. If the *cul-de-sac* is not discovered at its normal situation in the concavity of the os sacrum, we are then able to carry the finger in every direction, for the purpose of exploring the whole pelvis, and, aided by the catheter and pressure over the abdomen, to discover with certainty the fluctuation of the lower portion of the intestine, if it should happen that it is situated at some point of the anterior or any other portion of the pelvis, provided it has entered the pelvis at all. Should there still exist in the mind of the surgeon a doubt in regard to the fluctuation, the exploring trocar can be used. Being assured that he has discovered the *cul-de-sac* of the lower portion of the intestine, he begins to disengage it from cellular adhesions, mostly by means of his fingers, if it is high up; or he can use a pair of scissors or a scalpel, if it is not very distant. This being accomplished, he inserts two fine double hooks in the intestine, and draws it, or that portion of it that yields easiest, gradually down, separates it again from cellular or fibrous adhesions, if necessary, until the intestine appears at the perineal wound; taking care to make the traction more on the posterior than anterior wall of the *cul-de-sac*. An incision of about three-fourths of an inch is then made in the intestine, between the two little hooks, the meconium is permitted to to escape, and the mucous membrane of the intestine is attached very accurately, by a sufficient number of interrupted sutures, to the perineal wound, in such a manner that the fœcal matter cannot come in contact with the surface of the perineal wound, and prevent union by first intention. The remaining portion of the perineal wound is also to be united by a sufficient number of sutures.

These are, in general, the leading features of the operation which I would recommend in cases of imperforate anus of new-born children.

[In an after part of the paper the author continues:]

As the surgeon can in most cases find the end of the rectum in the pelvis, he has only to explore the pelvis carefully, and after discovering it, to endeavour to establish the anus at its normal situation, since any other method for an artificial anus in the abdominal or lumbar regions is attended with too many dangers, and must be considered justifiable as a last resource only, under two circumstances:

1. Where it is impossible to carry the intestine downward through the pelvis, on account of too strong adhesions, the separations of which would be injurious to the neighbouring organs, and fatal in its consequences.

2. Where the rectum or the termination of the intestines cannot be discovered in the pelvic cavity.

These conditions of the intestine being the exception in most of the cases of imperforate anus, the surgeon should exert all his skill and perseverance to establish the artificial anus at its natural situation.—*American Med. Monthly, June*, 1859, *p.* 444.

56.—*Hemorrhoids and Prolapsus of the Rectum: their Treatment by the Application of Nitric Acid.* By HENRY SMITH, Esq., Surgeon to the Westminster Dispensary.—[Mr. H. Smith advocates the practice of employing nitric acid in prolapse of the rectum. As indicating his opinion on this point, we may quote the final paragraph of his treatise.]

It is not necessary for me to relate more cases, as those detailed show that prolapsus of the rectum may, as well as internal hemorrhoids, be cured without any other operation than the judicious employment of nitric acid. It is quite surprising to see the extraordinary comfort which one or two applications of this agent will give to patients who have been suffering years of misery. It will supersede the use of those atrocious pessaries and supports which patients every now and then bring out of their pockets to show us, and which, independently of being very injurious from the dilatation of the gut caused by them, are excessively nasty things, and chiefly calculated to amuse old women and hypochondriacal men, who have nothing else to do but to attend to the state of their bowels.—*Lancet, July* 23, 1859, *p.* 90.

57.—CASES OF PROLAPSUS ANI AND HEMORRHOIDS TREATED BY THE ECRASEUR.

By REDFERN DAVIES, Esq., Surgeon to the Birmingham Workhouse Infirmary.

W. B., aged 54, by occupation a porter, of pale and exsanguine countenance, but otherwise in good condition, has been the subject of prolapsus ani for the last five years; no cause known for it. He was treated about two years ago by an eminent surgeon with the nitric acid plan, which only relieved him, however, for a short time; the gut descending again as bad as ever.

Present State.—Upon an examination (shortly after passing his stool), there is seen to be a prolapse of the mucous membrane of the rectum to the extent of about a hen's egg in size. It is composed of three principal lobules, and is of a dark purplish colour, returnable with a little trouble—now facilitated by his having lain in bed for a a few days; on introducing the finger into the anus the capacity is found to be increased in size. The vessels going to the prolapsus are much increased in magnitude, some two or three of them presenting to the finger a barrel nearly equal to that of the radial artery. (This fact was particularly pointed out at the time of operation.) He states that the prolapse is usually down; the least exertion, as of walking a few yards, sufficing to cause its descent; that he is in constant pain and misery from it; and that defecation is always attended with the loss of a variable quantity of blood, and at other times an offensive ichorous discharge.

May 18. The patient well under chloroform (administered by Mr. Jauncey). The mucous membrane of the rectum constituting the prolapse was dragged down by double pronged hooks, and the whole of it removed with the aid of the écraseur devised by M. Chassaignac. About a teaspoonful of dark blood was lost, chiefly the contents of the prolapse, which were partially squeezed out. A compress and T bandage applied; to take two grains of opium. *Vespere.*—Feels comfortable, and passes flatus. Repeat opium.

20th. Has gone on well. Bandage removed. An injection of warm water given, which produced a copious evacuation, causing no pain, and accompanied by no blood, save a few dark clots about the size of peas. Continue the opium—gr. ij. daily.

22nd. Bowels again opened by injection. No pain—no blood; is up and about the ward.

June 25th. He states that there has been no descent of bowel since the operation, and that his stools, of natural calibre, pass without any pain, blood, or difficulty. He is daily increasing in strength and flesh.

A. M. aged 53, has been the subject of piles for the last three years, during eighteen months of which time she has been confined to her bed almost continually, walking or even sitting being attended with much pain and discomfort. Defecation is always accompanied with great suffering and a variable loss of blood. Her general appearance is that of a person in a state of great debility from constant hemorrhages. During the last three months, nitric acid has been freely applied to those piles within the anus, by means of the usual anal speculum. On those occasions its application was both at the time, and subsequently attended with much pain, without being followed by any amelioration of symptoms whatever.

May 25th. The patient well under chloroform (administered by Mr. Jauncey). Five large hemorrhoidal clusters were drawn down, and the chain of the écraseur having been adjusted at their base, they were removed, with the loss of not more than half-a-teaspoonful of dark blood.

A compress and T bandage. To take gr. ij. opii.

In about half-an-hour after operation, she suddenly got out of bed, intending to make water, and the straining so to do caused her to lose about half-an-ounce of blood and she became faint.

The same treatment as above was adopted.

Save this trifling accident she has progressed very favourably, and is now able to walk about the garden without discomfort, and has neither pain nor loss of blood in passing her stool.

Remarks.—The chief point worthy of notice in these two cases is the demonstration of the great and practical value of the écraseur in these affections. In both instances a speedy and safe cure has been effected, and that after the nitric acid plan has failed.—*Med. Times and Gazette, July* 9, 1859, *p.* 31.

58.—*Prolapsus Ani.* By Dr. THOMAS WOODS, Parsonstown Workhouse Infirmary.—Biddy Grattan, aged six years, suffering from prolapsus ani for nearly two years. The prolapsed part cannot be returned; it is about three inches in length, and the size of a lemon. The mucous membrane lining the tumour is congested. The child is emaciated and cadaverous. A large abscess is forming on the thigh. There is occasional diarrhœa, and no appetite.

The prolapsed rectum was rubbed over with nitrate of silver in substance. The protruded part became smaller, and the nurse was able to return it, but after a few hours it came down again. Strong nitric acid was then applied, by drawing a glass rod, dipped in the acid over the protruded bowel, a quarter of an inch wide on each side. The bowel was then returned, but it prolapsed the next day. The application of the nitric acid was repeated, a little more liberally; the bowel was returned, and remained so for two days. The child got meat and ate it. When the bowel protruded, it could be seen that where the nitric acid was applied the mucous membrane was removed. The nitric acid was again applied, the bowel returned, and it did not again come down. The acid was put on the prolapsed bowel by drawing it in the way first mentioned four times in the week; and the child perfectly recovered. The abscess which was forming on the thigh disappeared by absorption; and in about two weeks after, the bowel remained permanently up. The child—who for the last two years was a most miserable-looking object, emaciated, suffering, and constantly confined to bed, with a poultice to the prolapsed rectum—gained a healthy and cheerful look, and became the fattest pauper in the house, with good use of her limbs. The cure is permanent.—*Dublin Quarterly Journal, August* 1859, *p.* 18.

59.—*Fissure of the Anus.*—One of the most painful affections situated in the neighbourhood of the anus, is a fissure alongside of the sphincter. When examined, scarcely any lesion is to be detected; but on rendering the structures tense, a very small slit with reddened margins may be observed, and from which there may be a little secretion. This apparently trifling malady occasionally causes the most intense agony. Latterly, several examples have come under Mr. Hancock's care at the Charing-cross Hospital, which have been effectually cured by the division of a few of the muscular fibres of the sphincter at the situation of the fissure. It is unnecessary to divide the entire sphincter in the treatment of this affection, and it is now seldom resorted to. On the 2nd instant, this operation was repeated by Mr. Hancock on a woman twenty-seven years of age, whose sufferings have been very great for nearly twelve months, from the presence of a fissure of the kind mentioned. On passing her motions, the sensation was compared to that of a knife running through her. When we saw her on the 7th, five days after the operation, she expressed her-

self as completely relieved; all pain had gone, her health had generally improved, and she was beginning to assume a cheerful aspect. Patients with a fissure of the anus have a careworn and anxious expression of countenance, more so than is observed in fistula of the bowel; but it quickly disappears when surgical relief has been obtained.—*Lancet, July* 16, 1859, *p.* 61.

60.—*Double Fistula in Ano treated by a Single Division of the Sphincter.*—Although at first sight it may seem to be a trifling matter, whether one or more divisions of the sphincter ani muscle be made in cases of complicated fistula about the anus, in reality considerable importance should be attached to it if the future comfort of the patient is considered. There can be no doubt whatever, as we heard Mr. Fergusson remark, at King's College Hospital, on the 2nd instant, that if there are two or more divisions of the sphincter muscle, subsequent union does not permit of such an amount of control over its functions as when only one is made. Being aware of the truth of this from experience, he treated the case of a young woman, who had what might be called a double fistula, in the following manner:—Three years ago she had an abscess in the perinæum, which burst externally at the margin of the anus; probably a second formed, which also burst externally, but the two cavities merged into one. This aperture, on examination, was found not to communicate with the rectum, and was, therefore, what is called, in surgical language, *a blind external fistula*, with a double opening. Instead of running a bistoury through the sphincter in two places, as we have seen done by some surgeons, Mr. Fergusson divided the skin between the fistulæ, and laid open the cavity to which they were the outlets. He then cut through the sphincter nearest the upper fistulous opening, in the usual manner, and the wound was carefully dressed from the bottom. Thus, by a very simple proceeding, the case was converted into one of ordinary fistula in ano.

The practical surgeon will at once recognise the benefits to be derived from an avoidance of multiple divisions through the sphincter ani.—*Lancet, July* 16, 1859, *p.* 61.

61.—ON THE TREATMENT OF SINUS BY THE INJECTION OF IODINE, PARTICULARLY FISTULA IN ANO.

By Dr. Thomas Skinner, Liverpool.

[In 1830 Lugol first proposed the use of iodine injections in the treatment of various affections, as scrofulous abscess, sinuses connected with disease of the hip and other joints, and caries of the bones. Subsequently Dr. Clay, of Manchester, recommended it in fistula in ano.]

During the month of Nov. 1856, I was initiated into the practice by my esteemed master, Professor Simpson. The first case I injected

was one of fistula *in ano*, and it is referred to by Dr. Simpson in the Medical Times and Gazette of 16th April last. The patient came from the north of Ireland, and had suffered for many years from the disease. By Dr. Simpson's direction, I attempted to inject the fistula; but from the extreme smallness of the orifice, I failed to do it justice. On informing him of this, he suggested the nozzle to the syringe represented in the accompanying woodcut, which I will describe immediately. The patient being again prepared by an aperient and an enema, I injected the fistula, and this time I caused the injection to appear at the internal or rectal orifice. The strength I then used was two drachms to an ounce of spirit (No. 3, as opposite), and the quantity I injected was under thirty minims. There was scarcely any pain complained of, and in three days the fistula was entirely and permanently cured. Within a week of the operation, it withstood the powerful test of the hydraulic pressure of one pint of tepid water injected into the rectum, not one drop of which passed through, or in the slightest degree distended the cicatrised cutaneous orifice of the fistula. This case was seen again three months afterwards, and there was no sign of the disease beyond the sunk cutaneous cicatrix; and some months after that, Dr. Simpson received information that the patient was in the enjoyment of the best health and spirits, the old enemy being perfectly quiescent. I have taken the liberty of detailing this case of Professor Simpson's, as it was my first attempt at the practice; and I do so with less hesitation, as he has already associated my name with it. I have permanently cured other three cases in the female, one of which is fully detailed at page 499 of the British Medical Journal for 1859, and which is especially interesting, as showing, that fistula *in ano* may be an efficient cause of sterility. It also shows, that a formidable fistula with three cutaneous sinuses and apertures communicating by fistula with an ulcer in the rectum, may be cured with little or no inconvenience and without any danger, in the short space of three days. The means adopted were a simple longitudinal incision through the mucous membrane including the ulcer, and a single injection with tincture of iodine through the fistula. The details of the other cases would only occupy unnecessary space; so I will content myself with offering a few practical observations.

Practical Remarks.—Dr. Clay took three weeks to effect a cure in his case; I suspect this was owing to the weakness of the tincture he used, and the plan he adopted. He injected the fistula every day for the first three days, and then every other day for the next twelve; in all, nine injections or dressings. Now, I cannot but think that this does harm, as it tears up the adhesions of the previous day, and leaves little chance of consolidation. Dr. Clay says: "The tincture could not be detected in the rectum after the second injection." (Medical Gazette, Sept., 1843.) I am inclined to believe that, if the injections had then been discontinued, the treatment would not have extended

to three weeks. We must remember that the force of an hydraulic instrument, like a syringe, is very great: the stream is a most insinuating and powerful wedge, particularly when the bore of the nozzle is very fine.

M. Boinet and Dr. Clay inject one or two teaspoonfuls of their tinctures. I have never used more than thirty minims of any of my own, and I have often succeeded with less. M. Boinet uses a "knob-bed canula," which is objectionable, unless the orifice is dilated. He recommends a finger to be placed on the internal opening in the rectum, and the injection to be retained for five or six minutes. But, in my opinion, the finger on the internal orifice will not prevent the injection from passing into the rectum; and, if the injection is strong enough, retention of it is unnecessary.

Preparations and their Strengths.—In regard to the strength of the solution for injection, it varies with each observer. M. Lugol's solutions are as follow:—

	No. 1.	No. 2.	No. 3.
Iodine	gr. ii	gr. iii	gr. iv
Iodide of potassium	gr. v	gr. vi	gr. viii
Distilled water	lb. i	lb. i	lb. i

These were intended for injecting the fistulous tracks leading to carious joints; and, although these strengths are said to be attended with danger, "causing occasionally intense inflammation and sloughing of the soft parts" (Manual of Therapeutics, Waring, sect. 1465); yet, I am certain they will be found almost inert in fistula *in ano*. I rather incline to think, that the damage done to the soft parts by such injections is owing to the injury first done to the diseased joint. M. Lugol used No. 2 in fistulæ connected with *morbus coxarius*.

Dr. Clay used the ordinary official tincture of the Pharmacopœia, full strength, which is very good for some cases, but it rarely succeeds by one injection, so far as fistula *in ano* is concerned.

M. Boinet's injection solutions are of two strengths:—

	No. 1.	No. 2.
Iodine	℥ss	℥i
Iodide of potassium ...	gr. xv	gr. xv.
Distilled water	℥ii	℥x

I object to the iodide of potassium and water. I believe that the less there is of water, and the purer the iodine, the greater certainty there is of success. I use three strengths, as follow:—

	No. 1.	No. 2.	No. 3.
Iodine	℥ss	℥i	℥ii
Sulphuric ether	q. s.	q. s.	q. s.
Spirit of wine	℥i	℥i	℥i

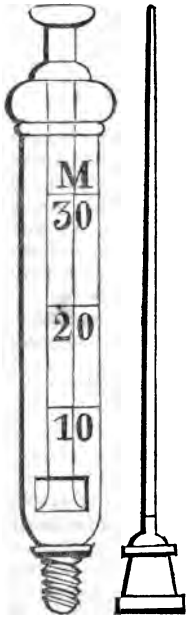
The sulphuric ether is added simply as a quick solvent instead of iodide of potassium. I find that a tincture composed purely of sulphuric ether and iodine is best, but it will not keep at the same strength for one day. I have, in consequence, lately been in the

habit of extemporising such tinctures at the moment, for various purposes to which I apply them. They are as follow:—

	No. 1.	No. 2.	No. 3.
Iodine	gr. iiiss	gr. viiss	gr. xv
Sulphuric ether ...	℥i	℥i	℥i

In preparing these tinctures, the following facts must be borne in mind. The iodine should be dry and resublimed. The ether should not be of less specific gravity than ·750; of density ·725 it is useless, as it cannot be drawn into, far less retained in the syringe. It should be prepared in a test-tube with a well fitting cork. By using such tinctures, the ether evaporates at once, and leaves a perfect coating of pure iodine on the walls of the fistula or sinus.

Description of Syringe.—My own method is little different from the plan first suggested to me by Professor Simpson. I will first describe the syringe; the accompanying woodcut will assist. The cylinder and piston are such as belong to Dr. Alexander Wood's syringe for hypodermic injection; the nozzle is the important part. It is composed of a very fine gold tube, so as to resist the corrosive action of the iodine; the tube is about one-sixteenth of an inch in external diameter, so as to pass into the finest fistula the same as a delicate probe. The tubular portion ought to be, at least, two and a half inches long, fixed into a silver socket with *hard* solder, as iodine destroys soft solder. The silver socket has a female screw in it adjusted to the male screw of Dr. Wood's syringe. Any one possessing Dr. Wood's syringe may have the extra nozzle supplied by Mr. Young, cutler, Princes Street, Edinburgh. After using it for this purpose, it should always be cleaned by pumping dilute liquor potassæ through it; and before using the piston for narcotic injection, fresh cotton should always be applied.



Operation.—Prepare the patient with an aperient and enema. If it is a *complete* internal fistula, which may be easily diagnosed by dilating the rectum with Weiss's female dilator, or with the bivalve anal speculum of Mr. Ferguson, of Giltspur Street, and injecting from the external opening a little sweet milk. (There is no probe for this purpose like a hydraulic one.) If the fistula is *complete*, place the fenestrum of the speculum over the rectal orifice. Clear out the sinuses by injecting them with plain tepid water. Insert a little loose cotton wool into the speculum to absorb any excess of injection,

as also to protect the mucous surface of the rectum and anus. The stain on the wool, if any, will witness to the passage of the injection. Fill the syringe with the iodine solution of the selected strength, expel all air from it, pass the point of the nozzle a little way into the fistula, and force the injection through it. If there are any cutaneous sinuses, with a little dexterity, they may also be injected at the same time; or, the instrument may be refilled, and every sinus injected, although this is not always absolutely necessary. Previous to the operation, or as soon as convenient, I introduce a suppository into the rectum containing half a grain of morphia.

If the fistula is *incomplete*, or blind external, no speculum is required, but it is necessary to attend to the following particulars:—Dilate the external orifice if necessary, and sound the sinus delicately with a blunt pointed probe, avoiding to make false passages. Having found the "bearings" of the sinus, clean it out with tepid water, pass in the gold tube of the nozzle as far as possible and inject. If this is not attended to, and a portion of the pyogenic surface or membrane is left untouched at the cæcal extremity, failure may result. It is not necessary that the injection should be retained; I generally press the parts immediately, so as to expel as much as possible; it seems sufficient that the surfaces are touched.

Where the internal aperture of a complete fistula opens into an ulcer, the ulcer should be incised immediately before injecting. It will certainly heighten the pain, but I believe such incision to be essential. Or, it may be more conveniently accomplished by two operations; first, incise the ulcer, which will be healed in three days or so, and as soon thereafter as is thought desirable, inject the fistula. I followed this plan lately, in a case where I was kindly assisted by my friend Dr. Taylor, of Walton Lodge, who first suggested the idea of dividing the operation.

Regarding the repetition of the injection, I would remark, that, if the first is properly performed, and of the proper strength, a second operation ought not to be required. In the event of failure, I do not repeat the injection before the expiration of the third day; and I am convinced that, if such is necessary, on each occasion the solution ought generally to be increased in strength. I have only once known No. 3 fail in producing adhesive inflammation in cases of fistula *in ano*, by a single injection, the cause of failure seemed to be over action; and I have not met with a single bad consequence, pain excepted. To judge of the proper strength to inject, I am guided by the age of the fistula and by the pain produced while probing.

Subsequent effects: Pain and the Stains of Iodine.—Although in many patients pain is little complained of, in others it may be so great as to require the immediate administration of chloroform, which may be given without fear, so long as the patient suffers pain, notwithstanding the previous half grain of morphia. Suppositories and poultices of ice will also be found useful. Water, or a weak solution

of liquor potassæ, is a good antidote, the latter converting the iodine into the iodide of potassium. A still better may be found in an emulsion of starch, which has the power of resolving the free iodine into the perfectly inert iodide of starch.

In the event of any stains of iodine getting on the linen, whether blue from the presence of starch, or brown from its absence, a solution of liquor potassæ in the proportion of one part to eight or ten of water will speedily and safely remove them. For this useful information, I am also indebted to my friend Dr. Taylor. It is much safer than the cyanide of potassium, as any stains on the skin of the patient may also be safely removed by it.

Contraindications.—If the patient's health is in a low condition or if the sinus or fistula is of recent date, or if there is a pouch-like cavity on introducing the probe and sounding, I do not operate. In such cases, the patient should be placed on good diet, with change of air and sea-bathing if possible, or the cold sitz-bath with alum, the cold douche, or cold sponging. At the same time, the fistula should be injected occasionally with a solution of tannin or of tincture of steel. In short, all means, constitutional and local, which are calculated to improve the health and produce contraction and consolidation of the cavity, ought first to be adopted; the injection of iodine may then be be used with effect. If any local or constitutional irritation, or more than usual inflammatory action is present, it must first be subdued by proper means.

The after-treatment need scarcely be mentioned. A little opium, to allay pain and keep the bowels quiet, with ordinary diet, and keeping the patient at rest for a day or so, are about the only directions necessary.

I have been thus minute in details, in order that there may be as little excuse as possible for reports of failure by those who may try their prentice hand at the operation.

Possibility of its return.—In the case I recorded in the Journal, the fistula was closed upwards of nine months. The cause of the return was a fresh phlegmon, established in the site of the old fistula during the course of an attack of scarlatina. It ought not to be wondered at, if the fistula should also return in cases where the mucous membrane is perforated extensively by ulceration. In these cases, there are often hemorrhoids, accompanied with dilatation of the rectum, and possibly, ball-valve obstruction—these conditions being very common in the female. In such patients, and those who suffer from habitual constipation, the mucous membrane becomes jammed and lacerated by the undue pressure it is exposed to between the hardened fæces and the point of the coccyx, more especially during the act of defecation. Under such circumstances, perforation of the mucous membrane again takes place, fæcal matter gets into the cellular tissue, fresh abscess and fistula result, and we feel disappointed. Why? because we do not consider that similar causes will always produce simi-

lar effects, whether we incise or inject, or whatever method we may adopt for the purpose of cure. Measures should be adopted to obviate the above conditions, if they exist, otherwise disappointment will certainly follow.

Advantages.—I am not so enthusiastic as to suppose that injection with iodine is at all likely to supersede the knife; no one can possibly have greater confidence in the knife than myself; but it is a difficult matter sometimes to inspire our patients with the same amount of confidence and love for it. I advocate the claims of iodine as being next in certainty to the knife, and as being infinitely less dreaded by the patient. When we contrast the perfect innocuousness of injection (barring pain), its simplicity, and its wonderful efficiency, with the possible and not at all improbable dangers of incised wounds of the anus and rectum, and as "we ought to do unto others as we would be done by," I cannot help suggesting, that injection with iodine ought, in the majority of cases, to take precedence of the knife.

Concluding Remarks.—I will only add in conclusion, that it has been very successful in my hands; in fact, it has rarely failed. I have injected sinues of many months standing, following bubo in the groin, with No. 1 or No. 2, and I have always been successful at the first injection. In one such case, a gentleman had been most carefully treated by a skilful practitioner with cod-liver oil, syrup of the iodide of iron, and other tonics, sea-bathing with change of air, cold sponging, and such measures, but all to little purpose; the sinus kept on discharging. One single injection of No. 1, without the slightest pain or inconvenience, did all that was requisite. I gave him no prescription, which seemed to discourage him; but next day he reported himself cured. He has since been to Montreal and back on mercantile business, and the sinus remains perfectly healed. Sinuses about the nipple, mamma, axilla, and vulva, I have treated with similar success; also sinus in the gums following gumboil.

About a month ago I had a case, where I had good reason to suspect a carious condition of the root of a tooth or rather of the alveolus; I requested the lady to see a dentist, but she declined. I injected the cloaca once with No. 3; the *fœtid-sanious* discharge ceased, and the mucous surface closed over the opening. I would here remark, that whether this was a case of genuine caries or not, considering the success obtained by M. Lugol in the use of iodine in this disease, it deserves a further trial. M. Lugol used baths and frictions of iodine, at the same time that he injected the fistulæ with his solution No. 2. I would not recommend injection in the caries of joints, or where the disease is deep-seated, nor in the immediate neighbourhood of serous or synovial membranes. If it is to be at all successful, I think it should be limited to superficial caries, where the disease is not extensive or very far advanced, and in those cases only which are likely to be benefited by a stimulating and caustic treatment. Caries of the bones of the tarsus would probably be the most favour-

able for the treatment. I would first clear out the diseased part with tepid water, and than inject from five to ten minims or more of the *ethereal* solution No. 3, and I would not repeat it until the effect of the first injection had passed off. Constitutional treatment, as a matter of course, must precede, accompany, and follow, the local means. I have, however, had no experience of injection of iodine in caries beyond what I have stated. Lastly, I was asked by a lady to see her servant, whose appearance was disfigured by scrofulous enlargement of the glands of the neck, with two of them discharging slightly. I injected them with No. 1; they have ceased to discharge, but how long they will continue so, I cannot say.—*Brit. Med. Journal, Sept.* 3, 1859, *p.* 721.

62.—REMARKS ON STRICTURE OF THE RECTUM.

By Armstrong Todd, Esq., Surgeon to the Marylebone Dispensary.

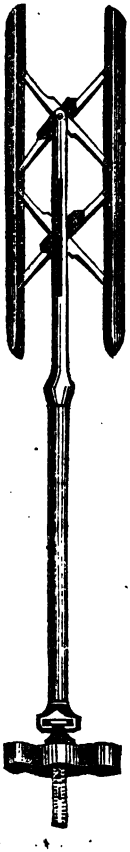
[The great difficulty experienced in treating cases of stricture of the rectum is from the anus and sphincter muscle being extended to the same degree as the bowel and stricture are themselves. These parts are much more irritable than the rectum itself, besides being naturally, even when fully distended, of much smaller calibre than the bowel above. Thus much useless annoyance and pain is caused.]

The causes of stricture may be considered to be,—Firstly, a submucous deposit, resulting from inflammation, which becomes of a fibrous character, having a great tendency to contract. It forms a ring round the mucous membrane, so that any contraction of it must lessen the calibre of the rectum. Secondly, stricture may arise from cicatrisation of ulcers; and, Thirdly, from cancerous or other deposits. Over this latter form surgery has little control. Dilatation in such cases cannot be expected to prove beneficial. In the first two forms, however, I believe perfect cure may be accomplished if proper extension be employed, and if it be continued for a sufficient length of time.

In the first form of stricture the effused lymph, although it appears to have become hard and resisting, yields pretty readily to continued and persevering pressure, and under this treatment it can be caused to absorb, so that a small-sized bougie is in a short time succeeded by a larger one, this again by a still larger, and so on until one of considerable diameter is admitted; but dilatation here becomes limited by the sensitive character of the anus, and the total absorption of the stricture is therefore not effected. If such be the case, although the patient may derive considerable benefit for a time, the contractile propensity of the stricture is, on the discontinuance of the bougies, permitted to proceed, and the bowel again becomes narrowed. The second form, viz., that produced by cicatrices after ulceration, also yields to the pressure of dilatation; in fact, all contractions

of cicatrices, even those resulting from burns, yield to extension made by mechanical contrivances. This has been fully shown by my friend, Mr. Tamplin, who has successfully used this treatment at the Orthopædic Hospital in cases of contracted cicatrices.

In this form of stricture the obstruction does not alone proceed from the cicatrisation; there co-exists always some plastic effusion resulting from the inflammation, which taking the fibrous character, I believe, performs a very great, if not the chief part in obstructing the bowel. Thus it is that after ulceration one finds a stricture of considerable tightness, which from simple attention to the general health occasionally becomes resolved without any mechanical treatment whatever. In such cases the effused lymph is reabsorbed before it has taken on that fibrous character which requires dilatation. It is, therefore, unnecessary to interfere with this form of stricture in its early stage, and such practice is frequently injudicious, as any attempt at dilatation may rekindle inflammation. Dilatation, then, seems to be the only means we possess of causing the obliteration of stricture of the rectum; but in order to make sufficient pressure by extension so as to produce complete absorption, it becomes necessary to construct an instrument, which will admit of the rectum being stretched to its full extent, while the anus and sphincter are allowed to remain in their natural contracted state. In all cases dilatation requires to be conducted in a judicious and gradual manner, and, therefore, in the construction of any instrument for dilating purposes this requirement necessitates strict attention.



The adjoining woodcut is of an instrument which has been made from my directions, by Mr. Ferguson, of Giltspur-street.

I have drawn it in a partially extended position, so as to show its action more perfectly. It consists of two blades of finely-polished steel, forming, when closed, a small-sized oval bougie. These blades are about three inches and a half long, rounded above and below, and made to separate from and approach each other in a parallel direction, by mechanism contained within. Beneath these is a round stem, quarter of an inch in thickness, upon which the anus and sphincter are allowed to contract. The parallel movement of the blades is effected by four slight bars of steel, placed in pairs—one pair crossing each other above, the other below, united at their intersection by a pivot. The extremities of each pair, at the centre of the blades, are connected together and to the centre of

the blades by means of hinges, their distal extremities being permitted to traverse a groove within the blades. The stem before spoken of is hollow, and is continued above, within the blades, into a fork, the extremity of which is attached to the pivot connecting the intersections of the superior crossbars. Through this hollow stem passes a rod, which also ends above in a fork, attached in a similar manner to the pivot through the intersection of the inferior crossbars. The other extremity of this rod is a screw, on which is a graduated scale; to this a thumb-nut is fitted, having a rim on its upper part, which revolves in a groove in the extremity of the outer or hollow stem.

The effect of this mechanism is, that when the nut is turned from right to left, the inner rod is pushed up, and the intersections of the crossbars are made to approximate, the horizontal diagonal of the central quadrangle becomes, therefore, elongated, and thus the blades are separated. A contrary movement of the nut draws down the rod, and brings the blades together. The screw is made so fine, that dilatation can be effected by an exceedingly gradual movement.

This instrument may be found useful in other surgical operations. In dilatation of the vagina, in Lloyd's operation for lithotomy, it would be found advantageous; also in the cure of fissure of the anus by extension. In this affection it would permit of unctuous applications, or those of solutions of nitrate of silver; or even it might facilitate the division of the fibres of the sphincter. And if the internal mechanism could be made fine enough, it might become applicable to stricture of the urethra, when its parallel expansion would be found very advantageous.

I used this instrument in the case of a lady who had suffered for a very long period from inflammation of the rectum and fistulæ. After the latter had been operated upon, and all became perfectly healed, a stricture, which co-existed with the fistulæ, engaged my attention. Two months having been spent under treatment by bougies, the anus would only admit of one five-eighths of an inch in diameter. On the introduction of the above instrument, almost immediately, by cautious and gradual extension, the stricture was dilated to an inch and an-eighth, without the least pain or unpleasantness to the patient. She also stated that she could retain the instrument as long as I wished, as it caused no inconvenience whatever.—*Med. Times and Gazette, Aug.* 6, 1859, *p.* 130.

63.—*Enormous Ranula.*—At the Cancer Hospital lately, under Mr. Weedon Cooke's care, was an eccentric old woman, who has had a ranula for some years, which had grown to the size of a large orange. When in the mouth it protruded one cheek in the most unsightly manner, and when allowed to hang out of the mouth it was like a transparent jelly-bag. She was in good health, and able to eat and talk with but slight inconvenience. Many surgeons have seen it, and

wished to operate; but she steadily resisted all such interference. Not being allowed to snip out a portion of the membrane, Mr. Cooke proposed the application of potassa fusa, to make an aperture which would not close up readily; but this also she decidedly objected to.

It is very seldom that a ranula is seen larger than a walnut or pigeon's egg, because when it attains that size under the tongue it pushes this organ upwards and backwards, and sometimes most seriously interferes with both speech and deglutition. If the cyst continues to increase in Mr. Cooke's patient, it may spontaneously rupture, and partial relief be thus brought about. Such a ranula as this cannot be said to be a dilatation of Wharton's duct.—*Lancet, Aug.* 20, 1859, *p.* 186.

64.—*Ascarides.*—Dr. Compérat has got a cure for ascarides, which has never failed in his hands. It is a simple injection of water, containing five, ten, fifteen, or twenty drops of sulphuric æther, according to the age of the individual, and repeated more or less frequently, according to the number of the animals present. This agent, he says, has a double advantage. By its subtility it readily enters into and destroys the larva; and by its antispasmodic powers it allays the spasmodic and nervous symptoms produced by the animals.—*Med. Times and Gazette, Aug.* 27, 1859, *p.* 223.

ORGANS OF URINE AND GENERATION.

65.—ON CASES OF MEDIAN LITHOTOMY; WITH REMARKS UPON THE OPERATION.

By Claude Wheelhouse, Esq., Surgeon to the Leeds Public Dispensary, and Lecturer on Anatomy and Physiology in the Leeds School of Medicine.

[Experience has shown that there is far greater power of dilatation inherent in the prostatic urethra than was formerly supposed, and the microscope has revealed that, so far from being truly glandular in its structure, very little real gland tissue is found in it as compared with involuntary muscular fibre; and Professor Ellis even asserts that it has a direct sphincteric action on the contained urethra. The rapidity of the contraction subsequent to dilatation is very remarkable, sometimes, in a few seconds after the removal of even very large calculi, being so contracted as not to re-admit the passage of the finger into the bladder, except under the influence of renewed dilating pressure. One of the chief sources of danger against which we have had to guard has been the total division of the prostate. If, therefore, we find that the prostate is sufficiently dilatable, without any division at all, to allow even large calculi to pass through it, and that the urethra

may be so opened as to allow us thus to extract them, one main danger of lithotomy is overcome.]

But neither is this too free division of the prostate the only source out of which, in lateral lithotomy, the danger of urinary infiltration may arise. The sphincteric fibres of the prostate being divided, all control is lost, for the time being, over the contents of the bladder, and the urine, continuing to dribble through the wound for many days, is unceasingly in contact with its cut edges, rendering the patient still further liable to the same danger, should healthy lymph fail to be thrown out over their surfaces.

By reference to the accompanying cases, it will be seen that by median lithotomy this second source of peril is also removed; for it is worthy of observation that immediately from the time of the operation, the neck of the bladder being uninjured, the patient possesses perfect control over that viscus—can empty it at will, and in stream—and that, having done so, he can be washed and made clean and dry, and thus be kept perfectly comfortable between each act of micturition; and furthermore, since the posterior layer of the deep perineal fascia remains undivided, it must so guard the areolar tissue of the pelvic cavity from infiltration *during* the evacuation of the bladder as to render that accident almost impossible. Again, the liability to subsequent erysipelas is greatly lessened by the fact that the patient occupies a clean, *dry* bed, instead of lying for many days in sheets saturated with decomposing, and therefore ammoniacal, urine. If the operation be carefully performed, it is hardly possible to wound either the rectum or the artery of the bulb—impossible to wound the pubic artery; and though there may be some considerable amount of hemorrhage from the prostatic venous plexus, this will not often be such as to give rise to serious apprehension or alarm. So far, its results in the hands of our Leeds surgeons have been very encouraging: only one death has occurred in seventeen operations.

Case 1.—June 30th, 1858. C. O., aged seven years, a puny, ill-grown boy, presenting all the appearances of one who had long been the subject of great suffering, thin, cachectic, and scarcely able to move about, was shown to me as the subject of stone; and on passing a sound into the bladder, a calculus was readily detected. His sufferings during and after micturition were described as so great as to render the child an object of commiseration by his neighbours, and such as to lead his mother willingly to accept the risk of any operation by which they might be relieved. On careful examination, the urine was found free from any condition contraindicating the operation of lithotomy, or leading to the supposition of any disease of the kidneys; and since the bladder was also believed to be free from morbid change, the operation was decided upon. A dose of castor oil at bed-time, and an enema of warm water on the following morning, were the only preparation required; and on the 30th of June, I proceeded to operate

by Mr. Allarton's "median method," the child being first placed under the influence of chloroform.

A curved staff, grooved on its posterior aspect, was passed into the bladder, and held by an assistant firmly hooked up against the pubes. The forefinger of the left hand was then passed into the rectum, and allowed to rest against the apex of the prostate, and with this finger the staff could be felt entering that body. A long, sharp-pointed knife was then made to enter the perinæum immediately in front of the anus, and passed deeply towards the groove in the staff, into which it was directed, at the apex of the prostate, by the finger in the rectum. The membranous urethra and tissues of the perinæum were then laid open by one sweep of the knife, from behind forward, to the extent of about an inch and a quarter. A probe was next passed along the groove into the bladder, and the staff withdrawn. On then passing the oiled finger into the wound, it was found to pass with the most perfect ease through the prostatic urethra, and the stone was felt at once. It was readily seized by lithotomy forceps passed in upon the finger, and extracted by one or two semi-rotatory movements without the smallest difficulty.

Very little blood was lost during the performance of the operation, and the child was placed in bed before the effect of the chloroform had passed away. The calculus was a phosphatic one, pear-shaped, seven-eighths of an inch long, six-eighths broad, and five-eighths deep.

[The child recovered without a single unpleasant symptom, the urine for two or three days being voided principally by the wound, but by the end of the week flowing wholly through the urethra.]—*Lancet, May* 28, 1859, *p.* 531.

66.—*Different Modes of Performing Lithotomy in the English Hospitals.*—A large majority of English Surgeons employ the ordinary lateral method of lithotomy on a curved staff. There has been, however, a considerable disposition to endeavour to improve on it of late years. The median plan, so strongly recommended by Mr. Allarton, has been tried by not a few London Surgeons, and amongst provincial ones has found a warm advocate in Mr. Teale, of Leeds. At the London Hospital it was first adopted by Mr. Ward about two years ago, and since then has been employed by his colleagues, Mr. Critchett and Mr. Gowland, each in a single instance. All the three patients were children, all recovered well, and in all it was considered that much less than the usual amount of bleeding took place. At Guy's Hospital, Mr. Cock has performed median lithotomy several times, and Mr. Erichsen has done the same at University College Hospital, both surgeons being, we believe, well satisfied with its results. On all hands it is considered to be best adapted for children and for small stones. At St. Bartholomew's Mr. Lloyd still continues to operate

in all cases by his recto-urethral (median) method, which we described in detail when he first adopted it in 1853. He informs us that he has not yet lost a case after it, and considers it decidedly preferable to the lateral operation. His colleagues, however, without exception, we believe, always employ the latter. At the Metropolitan Free, Mr. Hutchinson always employs his rectangular catheter-staff, and considers that he obtains great advantage from it. The same instrument has been employed at King's College by Mr. Lee, but it is not, as far as we observe, in use at any other Hospitals. In a recent instance in which the calculus was of large size, Mr. Hutchinson injected the bladder with oil instead of water, in the hope of facilitating the dilatation of the parts.

With regard to the median operation as advised by Mr. Allarton, it is universally admitted to be adapted only for small calculi. Now, Mr. Lloyd's experience during the last few years has quite proved, that when the anterior commissure of the sphincter ani is cut clean through from the perineal wound, there is no danger of the parts not healing. Might it not be well, therefore, to adopt this measure whenever, after the usual median incisions, the stone has been reached and is found too large for removal? Mr. Lloyd's operation gives abundance of room.—*Med. Times and Gazette, July* 9, 1859, *p.* 34.

67.—ON LITHOTRITY.

By FREDERICK C. SKEY, Esq., F.R.S., Surgeon to St. Bartholomew's Hospital.

[The author commences by stating that the larger his experience of calculous affections, the stronger is his conviction of the well-marked superiority of the operation of crushing over that of lithotomy. He approves of Allarton's mesial operation, which has recently been tried by Mr. Lloyd.]

The staff being introduced into the bladder, the sphincter ani muscle is divided in front, a kind of speculum being passed into the rectum, for the purpose of rendering it tense. The urethra is then opened through the upper wall of the rectum, the remaining part of the canal is dilated up to the bladder by the forceps, and the stone extracted. I employ the term *dilated* because it is the term in common use, but I do not believe that the urethra, especially of a child, is susceptible of such rapid, or rather sudden, dilatation, without some rupture or laceration of structure. It cannot be effected by mere stretching, by which the walls of the canal are enlarged to a circumference of at least three or four times their natural magnitude. I do not mention this feature in the operation as detracting in any great degree from its merit. Dilatation of the prostatic portion of the canal has always been deemed a commendable feature in the operation, and if it be coupled with laceration, it is laceration in detail, the

parts so lacerated being restored to their natural contact on the removal of the cause. I am informed by Mr. Lloyd that he has hitherto experienced no difficulty in the restoration of the functions of the sphincter muscle. The operation, to all appearance, is performed without difficulty, and the loss of blood is remarkably small.

No amount of excellence to which the operation by means of the lithotrite can be carried will ever supersede that of lithotomy—most especially, and for obvious reasons, in the case of children, in whom, fortunately, the mortality is far less than when the operation is undertaken at a more advanced period of life; also in some examples of disease in the adult. But I believe such selections should be comparatively few, and should obtain only as exceptions to a prevailing rule.

I propose now to call your attention to two cases on which I have recently operated in private. In the first of these the operation was successful, and although its progress was marked by symptoms of an untoward kind, the stone was entirely removed within twenty-seven days from the date of the first operation. The second case was unsuccessful, and on that account I give the particulars.

Case 1.—A gentleman of 41 years of age, stout in build, but healthy, became the subject of stone in the bladder, the signs of which might be traced back to a term of eight months. Having ascertained that he had a healthy urethra, admitting a No. 10 catheter without difficulty—that his bladder was so far tolerant of urine as to permit its retention for three or four hours, and that the urine itself was free from morbid deposit, I broke the stone across and withdrew the instrument. The operation occasioned so little pain that the gentleman dressed himself, and subsequently took his chair at the dinner table, at which he ate moderately, but with fair appetite. Within twenty-four hours he had passed some small fragments of lithic acid calculus, but without pain or inconvenience. On the fifth day I repeated the operation; but on this occasion, having now acquired some experience of the liabilities of the bladder, I broke the fragments by eight successive applications of the lithotrite. The pain of this second operation, although it somewhat exceeded that of the first, was by no means severe; but I directed my patient to lie in bed, and to drink largely of barley water and other diluents. On the following day he had passed a considerable quantity of detritus, the aggregate of which would have filled a large thimble. A less quantity passed on the second day, when he began to complain of pain in the bladder, and his urine deposited adhesive mucus. The pain became considerable. The adhesive mucus increased. He took mercury-and-chalk, with full doses of Dover's powder, night and morning, with infusion of diosma two or three times during the day. The pain subsided, and the mucus diminished in quantity; and on the eighth day I repeated the operation, and crushed the stone nine consecutive times. Catarrh of the bladder followed as before, but he passed in the course of

thirty-six hours a yet larger quantity of fragments than on the former occasion. The symptoms of what is termed chronic inflammation ran high, the mucus appeared in large quantity and was tinged with blood, appetite and sleep failed, his pulse rose to 100, and he was decidedly ill. The former treatment failed to control the symptoms, and I operated again on the sixth day. Immediately all the symptoms of internal mischief vanished; the pain subsided, the mucus diminished, his bladder became more tolerant of its contents, and he again passed detritus in a large quantity. It was now quite obvious that we had passed the ordeal of difficulty, and that the fragments of stone remaining in his bladder were very inconsiderable in quantity.

I operated again on the fourth [?] day, and completed the crushing, reducing every remaining fragment to a size capable of transmission along the canal of the urethra. Within forty-eight hours the bladder had entirely evacuated the whole of the calculous matter, and on carefully sounding with a variety of instruments, I was unable to detect the presence of the smallest fragment. Some months have now elapsed, and the vigilant observation of my patient fails to detect one symptom of his former disease. The stone, judging from the quantity of detritus obtained, was of moderate, not of small size. Had it been removed by means of the knife, it is highly probable that the time required for the patient's recovery would have exceeded that occupied by many days. During the progress of the treatment he cannot be said to have suffered severe pain; he was never brought within the circle of danger, and he left London with health unimpaired by surgical discipline or deprivation.

Case 2,—was that of a gentleman, sixty-two years of age; of a less healthy aspect than the subject of the last case. He had had symptoms of stone about nine months, and his health had suffered in consequence. His expression was that of a man worn by internal irritation. I ascertained the stone to be of moderate size, and its contact with the metal caused a ringing sound which was audible at a distance. On testing his urine, I found it albuminous, and postponed the operation. He was ordered diluted nitric acid in infusion of diosma, and his urine improved. In a week I introduced the lithotrite, and simply broke the stone once across. On withdrawing the instrument, and having completed the operation, Mr.—— exclaimed, "What! is that all? I have had no pain whatever." He dressed himself, and returned to the society of his family. On the following day he passed one or two small fragments of stone, composed of phosphate of lime; but he continued to sustain no inconvenience from the operation.

On the fourth day I performed the second operation. On introducing the lithotrite, the bladder appeared contracted. At all events I had some difficulty in expanding the blades of the instrument, although I had thrown into the organ the quantity of water I usually inject—viz., about four ounces. However, I caught the stone, and

while screwing home the blades, I perceived blood flowing somewhat freely from the orifice of the urethra. This determined me to desist, and I withdrew the instrument. For some time bloody urine continued to flow from the canal; but on the second day I was summoned by his medical attendant, in consequence of an attack of retention of urine, and I drew off about a pint and a half of urine, deeply coloured with blood. Retention again followed, and I removed nearly the same quantity, and of the same character of urine, on the fourth day. The presence of the distended bladder did not appear to cause him much inconvenience, nor its evacuation much relief. Urine, more or less bloody, continued to escape from the urethra without the effort of micturition. He had no local pain, and bore pressure, both over the bladder and on the perineum, without complaint. He was ordered gallic acid, in full doses. Sir Benjamin Brodie saw him at this stage, and did not augur unfavourably of my patient's case. He recommended the employment of Ruspini's styptic, and suggested the repetition of the operation as early as permissible. His increasing weakness was aggravated by the excessive action of a moderate dose of castor oil, and although the hemorrhage was reduced in quantity, his vital powers were now only sustained by the frequent employment of stimulants. Bladders of ice were applied to the epigastrium and to the perineum without effect. He became comatose, and died on the fifteenth day from the second operation.

The post-mortem examination exhibited a contracted bladder, thickened, with its inner surface coated with coagulum: a calculus of about the size and form of a moderate-sized walnut, broken into three parts—its composition, oxalate of lime, coated with phosphatic salts, and two lesser calculi entire; ureters dilated; kidneys diseased.

In my work on "Operative Surgery," I have referred to two or three similar cases to that of Mr. ——, but they are rare. The fatal issue in this instance is not to be cited as injurious to the good name of lithotrity. Had the old operation by the knife been substituted, the issue had, in all probability, been the same. The presence of albumen in the urine, when coupled with stone in the bladder, is not conclusive evidence of diseased kidney, and with symptoms of an urgent character we are compelled to make the effort to obtain relief. The operation of lithotrity, when carefully performed, creates little more pain than that of sounding for stone, and generally, in a healthy bladder, leaves as little irritation behind. The proportion of persons who suffer from complications of renal disease, coupled with calculi, is small. I do not think such cases can be safely treated by the lithotrite. Neither is the cutting operation a security against a fatal termination.

Believing as I do that the operation by means of the lithotrite is applicable to a large majority of calculous affections of the bladder—that, if well executed, it is safer as regards the life of the patient,

quite as certain as regards entire recovery, and less exhausting to the system, I recommend its practice for your consideration. And as I may not have the opportunity of addressing you again for some time, I purpose concluding these remarks with some general rules which may prove useful in your future career.

I advise your rejection of cases for lithotrity presenting the following characters:—

1. Manifest disease of the kidney.

2. The urethra so contracted as not to admit with facility a lithotrite of ample size.

3. The bladder so intolerant as to be incapable of retaining its urinous contents for three or four hours; and on the other hand, a bladder of low nervous susceptibility.

4. Much enlargement of the prostate gland.

The quantity of water injected should not exceed four or five ounces. In many subjects, the employment of chloroform excites the bladder to contract, and the injection has to be repeated. The lithotrite, from its full size and angular form, should be introduced with more caution than is usually required on the introduction of a catheter. No attempt should be made to open the instrument in the bladder until it has been pushed thoroughly home into the organ. In the act of separating the blades, do not withdraw the upper, without at the same moment pressing the lower blade downwards towards the bottom of the bladder. If this rule be not strictly observed, the upper blade will be painfully pressed against the neck of the bladder, from which hemorrhage may follow. The stone is to be brought into the lithotrite by pressing the lower blade suddenly, and by a slight jerk or twist of the hand, against the base or bottom of the bladder. There is neither necessity nor advantage in directing the instrument to the right or to the left. It should retain the mesial line throughout the entire operation. When the stone is caught, the blades should be screwed "home," lest small accumulations become large, and render the withdrawal of the instrument through the urethra difficult. At the first operation, do as little as possible. It may be deemed an experimental occasion, and it will be sufficient to break the stone once across. On all future occasions, the number of applications of the screw may be determined by the tolerance of the patient. The stone may be broken six, eight, or more times. The intervals between each operation will vary according to the condition of the bladder, and the quantity of detritus expelled. If the quantity be considerable, and the bladder quiet, the operation may be repeated in four or five days. The average interval is longer than this. Few cases pass through their course of treatment without giving evidence of irritability of the mucous membrane of the bladder, manifested by a discharge of tenacious mucus adhering to the bottom of the vessel. Unless in its aggravated form, it is not a serious symptom. It may be treated with diosma, or uva ursi, nitric acid, Dover's powder, &c.; but the best

remedy is the lithotrite. I have repeatedly seen this symptom subside on the repetition of the operation. The constitutional treatment is chiefly dietetic. Diluents should be ordered largely; and the moderate use of wine is unobjectionable. I have never seen any advantage obtained by an abstinent diet, nor any evil arise from an ordinary and habitual one. It is surprising how large a fragment may travel along a healthy urethra. They are arrested, however, most frequently at the glans, and if a fragment cannot be extracted by a pair of fine forceps in this situation, the urethra should be divided. When fixed low down in the urethra, they should be pushed back into the bladder. This may be effected by a large catheter (No. 12), cut off straight at the point, the extremity of the instrument being supplied by a movable knob, which is withdrawn when the catheter touches the stone. The open extremity of the instrument encircles the stone, which is forced backwards without injury to the mucous membrane. A small abscess in the perinæum may occasionally follow the violent employment of the lithotrite, or forceps, &c. It presents itself under the form of a small rounded tumour. It seldom requires active treatment, and, as a general rule, may be "let alone."—*Lancet*, *July* 30, 1859, *p.* 105.

68.—*Lithotrity and Removal of the Fragments at the time.* (Case under the care of Mr. FERGUSSON.)—[In a case lately under treatment at King's College Hospital, Mr. Fergusson employed what he termed a "favourite method" of his in expediting the cure. It consists in the removal by means of the lithotrite of as many fragments of the stone as can be got away, at the third crushing.]

The man having been put under the full influence of chloroform, the stone was broken by a large and strong instrument. A much lighter lithotrite was then introduced, and a fragment having been seized, the size of which was evidently moderate, it was dragged out. This manœuvre was repeated ten or fifteen times, and enough was removed to have made up a stone of moderate bulk. It did not, however, appear that all had been got away, as the fragments could not be made to fit so as to make up one stone, and the original opinion as to there being more than one seemed strengthened. In several instances considerable difficulty was encountered in getting the fragment seized out at the meatus, although it had slipped quite easily through the deeper tracts of the urethra. Occasionally it would escape from the grasp of the instrument and remain impacted about half an inch from the orifice. When this happened, Mr. Fergusson employed a small scoop or a pair of common dressing forceps to effect the final removal. Of course some bleeding attended the forcible dragging of the fragments out; it appeared, however, to come almost wholly from near the meatus. On the plate, after the operation was completed, we counted six fragments, all of them of too large a size

to have been voided spontaneously, and there were at least twenty others of smaller dimensions. There can, therefore, be no doubt that this plan of forcible extraction, per urethram, if safe, very greatly expedites the cure. Mr. Fergusson's dexterity in the use of the lithotrite may, it must be borne in mind, make that safe in his hands which would be otherwise in those of less experienced surgeons. Thus, although the instrument had, on the occasion alluded to, been introduced and withdrawn at least fifteen times during the sitting, yet the whole had not lasted more than about twenty minutes. The instrument seemed as if spontaneously, at each introduction to seize a fragment of right size for extraction the moment it entered the bladder.

Mr. Fergusson, in some clinical remarks at the conclusion of the operation, admitted that the plan he had adopted was one as yet on its trial. His own belief was, however, strong that when judiciously carried out it very materially hastened the patient's recovery, without adding to his risks. With regard to the degree of force which might be used, he said that his rule was never to employ violence if the stone stuck in the lower part of the urethra. By the lithotrite the size of the fragment might be estimated with a certain degree of accuracy, and if too large it should be crushed instead of being extracted. If, however, no difficulty occurred until reaching the anterior inch, he believed that forcible extraction through that part did no injury whatever. Some might incline to adopt the plan of the older lithotritists, and slit up the meatus before beginning; but he thought it unnecessary. He directed attention to the smallness of the instrument which he had used; and stated that though much too weak for crushing large stones, it did very well for the extraction of fragments.—*Med. Times and Gazette, June* 25, 1859, *p.* 651.

69.—*On a New Mode of Relieving Retention of Urine.* By Langston Parker, Esq., Surgeon to the Queen's Hospital, Birmingham. —[The writer has lately succeeded in two separate instances in relieving retention of urine in the following manner:]

A gentleman lately entered my consultation-room in great pain from retention of urine. He had not passed water for many hours; the bladder was much distended. He stated that ineffectual efforts had been made to pass a catheter, during which operations he had lost a considerable quantity of blood. I attempted to relieve him by the catheter, but failed to do so; I tried instruments of various sizes and various curves, but could not succeed in passing one into the bladder. I then took a No. 2 wax bougie, and inserted a small portion of potassa fusa into the end of it, after the manner proposed by Mr. Whateley, and practised by Mr. Wade in the treatment of permanent stricture of the urethra. I well moulded the wax over all but the extreme point of the caustic, and passed it rapidly down to

the point of obstruction: by pressing against this for a short time, it yielded, and I had the satisfaction of finding the bougie easily enter the bladder. I directed the patient to strain as I withdrew the instrument: a stream of urine followed, and the bladder was emptied. The retention did not again occur, and very little irritation accompanied or followed the proceeding. On the next day, the patient made water freely, but in a small stream.

The second case was very similar. The patient had travelled some distance by rail. The bladder was much distended, the symptoms urgent, and a catheter could not be made to enter the bladder. A small wax bougie was armed as in the last case, passed down to the stricture, and firmly pressed against it. It yielded very shortly; the instrument entered the bladder, and a stream of urine followed its withdrawal. This patient had a second attack of retention two days afterwards, which was completely relieved in the same manner.

A modification of this plan might be attempted by inserting a small piece of potassa fusa into the extreme point of a small gum-elastic catheter, and using it without the stilette. I am sanguine enough to hope that many cases of retention of urine might be easily and quickly relieved by the simple means I have suggested, and more formidable and dangerous operations thus frequently avoided.—*British Med. Journal, May* 21, 1859, *p.* 400.

70.—THE VALUE OF INTERNAL INCISION IN THE TREATMENT OF OBSTINATE STRICTURES OF THE URETHRA.

By Henry Thompson, Esq., Assistant-Surgeon to University College Hospital, &c.

(Read before the Medical Society of London.)

[Unquestionably, in all cases of stricture, the remedy first to be tried is dilatation, being the safest and simplest. But a large number of cases remain, not amenable to this mode of treatment alone; in many of these cases internal division may be practised with great advantage, being a means much less severe than external urethrotomy. More than thirty years ago Mr. Stafford introduced this practice, his instruments being probably even now well known. Subsequently it has been followed by Liston, Guthrie, and Coulson. The exceptional cases in which dilatation proves to be only a slight palliative, appear to be found in two distinct classes of patients, which may be thus generally indicated.]

1. The first class comprehends cases in which the stricture is so unyielding, that no dilatation, simple or continuous, materially enlarges the passage or ameliorates the symptoms. These are almost invariably strictures which have existed some twenty years or more, and in

patients who have been the subjects of repeated and long-continued courses of treatment.

2. The second class includes cases which, as compared with the preceding, occur during early life, but in which, nevertheless, the stricture exhibits considerable obstinacy to dilatation, although pursued under favourable circumstances. The symptoms are, however, ameliorated by it, although only for a short period of time, while usually on each recurrence they appear to be a little more severe and obstinate than before.

In the first class, internal division is recommended solely to meet existing evils of a very grave character.

In the second class, it is employed not only to remedy present difficulties, but also to anticipate future ones; since it is almost absolutely certain that serious if not fatal injury will result long before the natural term of life is spent, when in the early part of it a severe stricture is established, and merely palliative treatment is applied. And it is a question which demands our serious consideration, whether it is not wiser to give permanent relief to the patient, if possible, before extensive urethral disease has been established, or organic complaints in the bladder or kidneys have been set up, than to postpone the attempt until such changes have already taken place, and the power of palliative measures has been well nigh exhausted.

After a careful study and a considerable practice of urethrotomy, both internal and external, I believe that the former affords a most useful and efficient mode of treatment for a large proportion of the exceptional cases indicated in the foregoing classes; that is, for those cases in which the indurated tissue constituting the stricture can be divided with ease and certainty by an incision of very moderate depth. It is inapplicable to those which cannot be so divided; for where the indurated tissue is of such extent as to render necessary for its complete division a *deep* intra-urethral incision, I believe the hazard of internal is greater than that of external urethrotomy. Consequently I would employ no instrument, for cutting within the urethra, *capable under any circumstances* of making a deep incision.

There is a fact in connexion with this subject well worthy of notice—namely, that the unyielding or non-dilatable character which certain strictures possess appears to be developed for the most part in proportion to their proximity to the external orifice of the urethra. Strictures at or near the orifice itself are notoriously non-dilatable; so are those, although in a somewhat less degree, which occur at the distance of from two to four inches—that is, just in front of the scrotum. Much less so are those which affect the most common situation—viz., the bulbous portion; that is, a part of the urethra, about an inch in length, which lies anterior to the deep perineal fascia. This is a fact which has a very important bearing on the question of treatment, since there is no doubt that intra-urethral incisions of the kind here recommended are almost absolutely devoid of risk when

made anterior to the scrotum, so that the indications for their use and the freedom from danger happily coexist in relative proportions. Thus, it is not very common to meet with stricture of the bulbous portion which requires internal division. Although perhaps scarcely necessary, it may be desirable to premise that no internal incision should be applied to a stricture through which an instrument of some size cannot be passed into the bladder. I do not hesitate to endorse the proposition, that where the urine issues by the external meatus, an instrument may, with time and patience, care, and gentle manipulation, be passed through the stricture into the bladder; the crisis of retention sometimes excepted, when time is not always present, nor are circumstances favourable. I do not affirm the impossibility of exception; but I am entitled to say, after a considerable experience, and with the full consciousness of the responsibility incurred by so doing, that such exceptions should be very, very rare indeed.

For the successful practice of internal incision, as a rule, three conditions must be complied with. There may be some few exceptions to these rules, but they are to be regarded as almost of universal application.

First. The cutting instrument must be passed through the stricture, and the incision be made from behind forwards—that is, towards the orifice of the urethra; not from before backwards.

Secondly. The limits of the stricture being first accurately defined, the whole of the contracted part should be divided.

Thirdly. The borders of the incision should be maintained apart by catheterism subsequently performed, and healing by first intention thus be prevented.

These three points shall be separately and briefly considered.

The first condition.—The safest and most efficient internal incisions are those which are made from behind forwards—that is, when the operator divides the stricture by drawing outwards or towards himself an instrument which has been already passed through the whole of the contracted portion. The incision is then cleanly made, not jagged; but the reverse is apt to take place when the blade is pushed inwards—that is, from the operator. In this case, the flexible yielding walls of the urethra are liable to be pushed into folds in advance of the blade before they are cut, and the result is an uneven incision, the length and other characters of which are not under the perfect control of the operator. But in making the incision from behind forwards, the urethra is rendered tense, folds do not exist, and the incision may be made to correspond precisely in length and direction with the intention of the operator. That this difference between the two methods exists may be easily believed from a consideration of the structure and relations of the urethra; but it may be demonstrated by comparative experiments on the dead body. Further, I may state, that a very large experience by continental surgeons, apart from

theoretical considerations, has now left little doubt in their minds as to the comparative efficiency and safety of the two methods. While the occurrence of perineal or scrotal abscess, say they, as a result of the operation, is not extremely uncommon after incisions from before backwards, it is almost unknown in those of the kind above described made in the reverse direction. These facts, it may be added, I have verified by personal observation.

The second condition.—The limits of the stricture having been first accurately determined, the whole of the contracted part is to be divided. Incomplete division of the stricture almost always entails an unsatisfactory result. It is not depth of incision which is here referred to; for it has been already stated that unless the thickened tissue of the stricture can be divided by an incision of very moderate depth, (a term which shall be accurately defined hereafter when I come to consider the question of instruments,) internal urethrotomy should not be employed. The partial failure of an intra-urethral incision is generally in its length. Unless the operator is well aware of the liability to error in this respect, he is apt to miss a portion of the stricture, especially of its distant limit. The cause of this may be thus explained. A stricture, as is well known, is not generally constituted by a sudden narrowing of the canal, limited to a distinct portion as of a line or two in extent, but implicates more or less of the urethral walls before and behind the point of extreme narrowing; in other words, a certain portion of the canal is the seat of some lymph deposit, and consequently of some tendency to contract, to the extent of generally about a quarter or third of an inch before and behind the point in question. When the cutting portion of the instrument therefore, has been passed beyond the point of extreme narrowing, it is not sufficient merely at once to draw the instrument outwards, but the line of incision must commence about half an inch beyond that point, so as to ensure the division of all the portion affected by the disease. The incision will usually require, therefore, to be from an inch to an inch and a half in length. And freedom, in this particular of length, is in no way injurious. It cannot be too often repeated, as the result of the practice of modern urethrotomy,—a fact enunciated by all those who have a large experience,—that hazard attaches only to deep and not to long incisions. It is extremely important to remember that incomplete division is almost certain to be followed sooner or later by a re-formation of the stricture in that portion of the urethra which, although involved in the disease, was permitted to escape the blade of the urethrotome. Unless attention to this be ensured, a useful method of treatment may acquire undeserved disrepute. I have myself seen cases which, solely from want of attention to this particular, have not been benefited; and in this manner the operation has been unfairly discredited. It is not necessary to enlarge here on the means of acquiring an accurate idea of the situation and extent of a stricture, which I have detailed elsewhere, but only to

remark that, with the aid of an instrument with a bulbous extremity, such information, which is absolutely necessary to ensure the successful performance of internal urethrotomy, is easily obtained.

The third condition.—The borders of the incision are to be maintained apart by catheterism frequently employed, so that healing by first intention be prevented. Theoretically considered, the propriety of this proceeding would appear to be unquestionable. Reasoning by analogy, also, from the unsatisfactory results which have been known to occur from neglect to pass full-sized instruments after the operation by external division, we should assert the absolute necessity of the practice here also. But it is certain that some foreign surgeons who have had considerable experience believe that the subsequent catheterism is unnecessary. I have no hesitation, however, in regarding it as unwise not to practise it, believing that experience has proved it absolutely necessary in some instances, and, being so, it must be desirable in all. For if, in some cases, a complete cure has resulted from the mere internal incision, unassisted by subsequent dilatation, we have no reason to infer therefrom that in all cases the same consequence is to be anticipated; and as we possess no means of distinguishing the cases which may be cured without after-treatment, or, indeed, of knowing why such a result is met with at all, it appears to be hazardous not to practise the subsequent catheterism in all. The plan which I adopt and advise is, to pass a full-sized instrument daily during the first fortnight after the operation, and every other day during the subsequent week or fortnight. This ought to be a metal sound, having a uniform diameter throughout of not less than 11, 12, or 13; and it is desirable in withdrawing it to press its extremity downwards into or upon the line of incision, in order to maintain the borders apart, and subsequently to extend the recently-formed tissue there. The patient should then be taught to pass one for himself, which he may at first do twice a week, then once a week, and finally only now and then, as once a month or so, usually as a precautionary measure. The little wound which separated the divided borders of the fibrous material hitherto surrounding the urethra, and constituting the stricture, is thus prevented from closing by mere adhesion of those borders, but fills up by granulation, and the calibre of the urethra is restored. The new tissue thus formed is exceedingly extensible, and when subjected to daily and bi-weekly dilatation during three or four weeks after the operation in the manner above described, ensures a condition of the urethra which, although not equivalent, perhaps, to that which exists in a urethra which has never been diseased, is still one of immense improvement for a patient who had been previously the subject of severe and strongly-contractile stricture. The removal of these specific and dangerous characters is in fact the cure of the stricture, so far as that term can be applied as a result of any known mode of treatment. It constitutes a stricture completely dilatable which was not so before. The patient is relieved not merely from present ills,

but from the apprehension that evils of a grave character will occur in after-life.

There is one important point, in connexion with the selection of the cases to which internal urethrotomy may be deemed applicable, which appears to me, judging from opinions frequently expressed respecting operative measures for the cure of stricture, to require a little elucidation. There evidently exists a common belief that a stricture must be very narrow indeed—say one that admits at most a No. 1 or 2 catheter—in order to require treatment by any incision. Now, with great deference to those who may hold this opinion, I undertake to affirm that the narrowness of a stricture, *per se*, is not the single or even the most important element respecting it. True, it is usually the most obvious one; but I must venture to say that want of reflection, or of experience, or of observation, which is the same thing, has alone led to the supposition that the degree of diminution in the calibre of the urethra, and the intensity of the symptoms, or the gravity of the disease, have a corresponding relation. In other words, although it sometimes happens that a very narrow stricture produces comparatively slight symptoms, and these easily amenable to treatment by dilatation, it is no less certain that a stricture which is not narrow, but which is at the same time non-dilatable, may produce distressing and indeed dangerous symptoms. The extreme narrowness of a stricture, therefore, by itself, is not necessarily an indication for treatment by incision; neither, also, does the converse condition necessarily forbid it.

The most important physical characters of an organic stricture, whether its calibre equals No. 1 or No. 6 of the catheter scale, are Non-dilatability and Contractility. By the term Non-dilatability I intend to denote a condition in which the tissue constituting the stricture is so unyielding, that instruments well and perseveringly applied, even when favourable hygienic conditions have been ensured, will not materially enlarge its calibre. By Contractility I understand a quality which some strictures possess, through the agency of which, whatever temporary effect may be produced upon them by dilatation, the original degree of narrowing reappears almost immediately.

Thus, a patient may present himself with a stricture through which an instrument of the smallest size only can be passed, yet in a short time the normal calibre may be re-established by simple dilatation, and may be maintained with little attention subsequently. On the other hand, we sometimes encounter an example of the disease in which a No. 4 or 5, or even larger, may be passed into the bladder; nevertheless, the symptoms are very severe, and dilatation, perseveringly employed, produces little effect on the narrowing, and affords very slight or no relief. It is amongst these latter cases especially that I have often witnessed the excellent effects of a division of the indurated and unyielding ring which surrounds the urethra at the point of stricture, and which no other treatment so effectually, simply,

and safely combats. Hence it is that a remark often heard appears to me inappropriate—viz., that if an instrument of the size of No. 5 or 6 can pass, there can be no occasion to make any division of the stricture. Such a remark, I repeat, is due to the erroneous assumption that the calibre of a stricture is its mainly important character, the determination of which alone is sufficient to indicate its gravity; and also the kind of treatment which may be required. Few greater mistakes can be committed in connexion with this subject than to endorse this statement as a pathological truth. There are many other characters which possess equal, if not greater weight, in determining the nature and probable influence of a stricture upon the constitution, such as the degree of local sensibility and disposition to inflammation; its liability to occasion severe disturbance of the nervous system, as evidenced by rigors and fever on slight provocation, besides those physical characters of contractility and non-dilatability already alluded to. It is the presence or absence of such conditions, and not the mere fact of narrow calibre, which requires to be considered in coming to a conclusion respecting the appropriateness of any particular treatment.

We have already seen that the physical characters just named are found to affect more commonly those strictures which are situated about four inches from the external meatus than those which exist behind that limit, or within the bulbous portion of the urethra. Of this fact I believe a satisfactory anatomical explanation may be afforded. A stricture situated within the bulb, unless consisting of a very dense and considerable fibrous deposit, is dilatable, in part, probably, because it is surrounded there by a large mass of very extensible tissue—the erectile—which can oppose little or no mechanical resistance to the passage of a large instrument through the contraction. It is widely different, however, in the antescrotal part of the urethra; there the extensible structure exists in much smaller proportion, and the possibility of dilatation is limited by the two fibrous layers of the corpus spongiosum which, having comparatively little erectile tissue between them in the situation, oppose a mechanical obstacle to dilatation, while their close proximity appears also to favour the permanence of lymph deposit, which, during inflammatory action, may rapidly infiltrate the thin stratum of vascular structure intervening.

[In the second and remaining part of this paper the writer passes on to consider the instruments best adapted for the performance of internal division of stricture situated in the anti-scrotal and bulbous portions of the urethra.]

In the first place, it is necessary to possess a clear idea of the situation and extent of the stricture, or strictures (if there be more than one), which it is proposed to divide. The urethra should be examined by passing a full-sized instrument, No. 9 or 10, as far as

Civiale's Urethrotome

to the seat of stricture, wherever it may be, and the distance from the external meatus noted. Next, an instrument with a slender stem and a bulbous extremity should be passed through the stricture, that size being employed which requires a slight degree of pressure to enable the bulb to slip through the contracted portion. By means of this instrument it is easy to estimate the extent of the stricture, and also to ascertain whether another exists behind the first. To effect this purpose most of the urethrotomes themselves which cut from behind forwards are constructed. The enlarged extremity which conceals the blade serves as an exploring bulb, by means of which the length of the obstruction may be estimated, and also, when the difference exists, that side of the urethra on which it is most salient.

The instrument which I have most commonly employed, and still prefer, is that which was designed some fifteen years ago by Civiale, of Paris, and has been used by him with little modification to this day. For a few exceptional cases, in which the instrument is too large, I have used one designed by myself, and which is capable of being made in a smaller size than any previous urethrotome which cuts from behind forwards. The shaft of Civiale's instrument is equal in size to about No. 3, the bulb to No. 5 (see Fig. 1). Consequently, the stricture must have a calibre nearly equal to the last number; and if it does not admit it, my small instrument, of which the bulb equals in size only No. 2½ or 3, may be used, or, as is the custom of Civiale, dilatation, either occasional or by tying in a catheter for a given period of time, may be previously employed, in order to bring up the calibre of the stricture to the required size. The bulb of the instrument having been introduced about half an inch beyond the narrowest point of the obstruction, the cutting side being directed downwards and directly in the middle line, the blade is made to project to the required extent by means of an apparatus in the handle, which accurately controls the blade, and the instrument is firmly pressed on the floor of the urethra and slowly and steadily drawn outwards about an inch or an inch and a half, so as fairly to divide the obstructing portion—a result easily appreciated by the hand, in the overcoming of the resistance which the thickened and hardened tissue of the stricture presents to the sharpest blade; this latter is then immediately sheathed by a movement of the thumb, and the instrument is withdrawn. If two strictures exist in the same urethra, the second may be divided in a similar manner, if neces-

sary. A full-sized metal or gum-elastic catheter is then passed into the bladder and tied in. It seems hardly necessary to remark, although I have seen instances in which the precaution has been overlooked, that ordinary care must be taken to guide the catheter along the roof or upper wall of the urethra, and curve it well up under the pubic symphysis, to avoid engaging its point in the incision in the floor. The catheter should remain in the urethra at least twenty-four hours, the patient remaining in bed during this period. On the succeeding, and on each subsequent day during two or three weeks, a full-sized metallic sound should be passed into the bladder, and be at once removed. The operation is attended with very little pain, never requires the use of chloroform, and the confinement within doors amounts only to a period of from three to four days.

My own urethrotome, which has not hitherto been described, is so constructed that the smallest size which can be needed may be employed; much smaller than it is possible to adopt with the mechanism of Civiale's instrument, no special apparatus being necessary, as in his, to make the blade project. And it is solely for the sake of having a size thus small for exceptional cases that I have designed it. It is employed in a manner similar to that above described, excepting only that in making the incision, instead of drawing outwards the entire instrument, as in using Civiale's urethrotome, it is only necessary to draw outwards the handle of the blade to an equal extent, the canula remaining *in situ*, and being at the same time firmly pressed downwards on the floor of the urethra. The projecting of the blade is provided for in the simplest manner, by merely drawing it outwards from the bulbous extremity, which is slightly curved for the purpose of concealing it, (see Figs. 2 and 3.) There is no provision, however, for

FIGS. 2 & 3.

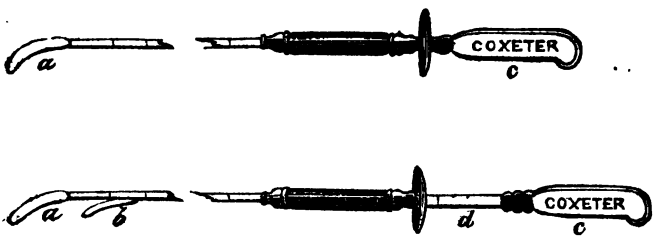


FIG. 2. The urethrotome of the smallest size.

FIG. 3. The same with blade drawn out. *a*, bulbous extremity; *b*, blade.

The form of this small urethrotome is very similar to that of an instrument employed by M. Mercier, of Paris, for incising the prostate, (figured in my work on the Prostate, p. 254,) only that in the latter a bulbous end is not employed, and the size is necessarily large, while the former is of the smallest that can be made.

regulating the degree of projection in the blade, as in Civiale's; but this power is rarely required, because it is undesirable to use anything

like the maximum degree of projection of that instrument. It is the medium degree which is almost always required, so that the advantage of adjustment apparatus is rather apparent than real. I have been careful in my urethrotome to adopt a degree of projection which is not capable of doing harm, but the whole of which is necessary if an incision is required at all. It is intended, moreover, only for those very narrow strictures through which it is not possible to introduce one of Civiale's instruments; being made therefore only in a small size, degrees of adjustment are still less necessary. In order to estimate exactly the degree of projection to be employed, it may be stated that when the blade is exposed, the distance between its point and the back of the instrument, when applied to the ordinary catheter scale, equals only the diameter of No. 14. The full medium degree of projection which I use in Civiale's instrument, and which I think ought not, or rarely, to be exceeded, is equal to No. 18 of that scale. Although the construction of the instrument admits of its being used to cut more deeply, I have never seen reason to exceed the projection above indicated.

For the division of strictures at or near the external meatus, the following method of accomplishing it is, I think, the best. Such constrictions are generally remarkably obstinate and unimprovable by dilatation, and are quite curable by incision, which however should be free. The most perfect instrument for the purpose is a small *bistouri caché*, which may be employed with or without previous dilatation, according to the calibre of the contraction. Having previously arranged, by means of a screw in the handle, the extent to which the blade is intended to project, it is introduced fully through the contraction, the edge of the blade being directed downwards, pressure is made on the handle, and the instrument is quickly drawn outwards. A plug of oiled lint, of the size of a 12 or 14 bougie, is then introduced, and left there until the patient requires to pass urine, when it is removed and exchanged for another. After a day or two the patient may introduce for himself a short metal bougie of full size, about three inches long, and provided with a handle sufficiently broad to obviate the possibility of its slipping altogether into the urethra.

I shall now very briefly remark upon some accidents which have been known to happen after internal urethrotomy, as practised in some of its varied forms. I refer to hemorrhage, urinary extravasation, perineal abscess, and constitutional affections, such as fever and pyæmia. Certain of these, it is well known, may be occasionally encountered after the use of instruments of whatever kind in the urethra, and for whatever purposes they may be employed.

First, as regards my own experience. I have the notes of forty-two cases, in which internal incisions of the kind here recommended have been performed in different parts of the urethra. From incisions practised upon stricture situated within one inch of the urethral orifice, I have never witnessed any effects whatever of an unpleasant

kind, unless one may regard as such some œdema of the prepuce, lasting for two or three days, an occurrence I have observed on one occasion only, and which was unquestionably due to voluntary imprudence on the part of the patient.

From incisions practised for stricture situated about three or four inches from the external meatus—i. e., just in front of the scrotum, I have never seen any ill effects whatever. Neither hemorrhage, abscess, nor any constitutional affection, has resulted in any case which has come under my observation. A little discoloration of the skin from ecchymosis sometimes occurs when the stricture is just anterior to the scrotum.

From incisions practised in the bulbous portion of the urethra—that is, in the portion comprising about an inch or an inch and a half anterior to the deep perineal fascia, I have twice seen somewhat free, but never dangerous, hemorrhage. Generally speaking, it has been slight—that is to say, as far as can be estimated, from one to three drachms at the time of the operation, and a little oozing for a few hours afterwards, often scarcely perceptible. In exceptional cases, it continues to colour the urine for a day or two; rarely, the loss may amount to a few ounces. I have never seen it serious in amount. On one occasion, I thought proper to control it by placing in the urethra the largest-sized catheter it would take, and a large pad on the perinæum, made to press firmly there by means of a tight T-bandage. This was completely successful.

Posterior to the deep perineal fascia, I believe organic stricture never exists, unless from traumatic cause, which may occasion it in any part, but such an occurrence must be extremely rare. Practically speaking, I am certain that it is so. Hence it is unnecessary to discuss here the propriety of making incisions behind the deep fascia.

Perineal abscess, extravasation of urine, dangerous febrile attack, pyæmia, and inflammation of the kidneys, are occurrences it has never yet been my lot to witness as a sequence of internal division of the kind recommended here. I do not doubt that they may occasionally occur, because any instrumental interference with the urethra, even the passing of a bougie, is apt in certain cases, happily very few in number, to give rise to these conditions. Indeed, no one who is experienced in the surgery of urinary organs can question that such occurrences must sometimes arise. Experience proves, however, beyond a doubt, that internal urethral incisions which are not deep, and which have been made from before backwards, are very unfrequently followed by the results in question. In relation to the practice of others which I have at different times observed, chiefly in Paris, where internal urethrotomy has long been largely employed, I can testify that unpleasant or dangerous results are very rarely met with after the method of operating which I have described. From the heroic treatment by deep incisions, which also has been practised there from time to time, disastrous results have happened, as might naturally

have been anticipated; and such treatment I cannot too strongly deprecate. Such occurrences have had the effect of raising an unfortunate prejudice in this country against urethrotomy in any form.

[After the reading of Mr. Thompson's paper, Mr. Coulson made the following remarks:]

Having adopted internal urethrotomy both in public and private practice, he was enabled to speak of its merits, and the plan of performing the operation. There was one indispensable condition, namely, that the operation should be preceded and followed by dilatation: without first dilating the stricture, the urethrotome could not be carried behind it; and after the operation was performed, unless dilatation were employed, the stricture would certainly return. The operation was, in fact, an aid to dilatation, which it rendered more easy, prompt, and effectual. The objection naturally arose, that if the urethra could be so dilated as to admit the bulbous part of the instrument behind the stricture, why should not dilatation be continued until the cure was effected by this means? But it was well known that cases often presented themselves in which dilatation could be carried only to a certain extent, and that far short of restoring the natural calibre of the canal; cases in which the contractility of the stricture was so great that retention would frequently ensue as the consequence of attempts to carry dilatation to the necessary point. The part of the urethra in which he (Mr. Coulson) had most frequently performed the operation was in the anterior four inches of the canal; sometimes close to the urethral orifice, and at other times further back; involving sometimes only a ring-like stricture, and at others a length of tissue two or three inches in extent. He would allude to one point which the author had omitted,—namely, that the removal of the stricture, if elongated, might require the operation to be repeated on two or three occasions, as in such cases the whole of the stricture could not always be divided at one time, with prudence. He believed that the operation, when carefully and properly performed, was attended with very little pain, much less indeed than that attending the forcible use of the catheter or bougie; and he had not known any injurious results to arise from it. If any danger attended the operation it would be when it was performed at the bulb, and to strictures at that site he had not often applied it. The instrument used should be of simple construction, easily handled, and, above all, one which would readily divide the resisting tissues without dragging or lacerating the indurated parts or pushing before it the yielding walls of the urethra. He believed that the urethrotome of Civiale, which the author had exhibited, was best suited to the purpose. For contractions of the orifice, or stricture near the aperture, he considered that a closed bistoury, such as he then exhibited to the Society, was the preferable instrument. The incision should be generally carried along the inferior surface of the canal, but in some cases it was neces-

sary to divide laterally in order satisfactorily to relieve the stricture; and after the operation a full-sized catheter should be introduced, and left *in situ* from twelve to twenty-four hours. Mr. Coulson repeated that this proceeding was only applicable, in his opinion, to those exceptional cases in which patient dilatation failed to effect a cure.—*Lancet, Oct.* 15 *and* 22, 1859, *pp.* 385, 396, 406.

71.—ON THE TREATMENT OF URETHRAL STRICTURE.

By Robert Wade, Esq., Senior Surgeon to the Westminister General Dispensary.

The means adopted by surgeons for the relief or cure of urethral stricture are usually classed under three heads:—1st. Dilatation; 2nd. The application of some escharotic substance to the diseased tissues of the urethra which form the obstruction; 3rd. Division of the stricture, either from within the urethral canal by some cutting instrument, as the lanceted catheter, and a host of other contrivances:—or, from without, by external incision, now commonly called perineal section.

These three methods might, it appears to me, be very properly classed together under the first head, as the two latter will seldom prove effectual without the aid of the bougie or other dilating instruments.

The term dilatation is, however, commonly restricted to the method in which dilating instruments only are used, that process being effected without the assistance either of escharotics or incision.

This unaided or simple dilatation is the method which, for a long time, has been principally relied upon by British surgeons for the relief or cure of urethral stricture.

There is, I believe, no better method of proceeding in a very large proportion of cases; and such has been its successful results that many very able surgeons have discountenanced every other mode of treatment.

How, then, it may naturally be asked, does it happen that a plan of treatment so simple, which has proved so efficacious in the hands of some, should so signally have failed with others of equal surgical celebrity? indeed, so unsatisfactory with the latter has often been its effects as to cause them to resort to treatment more severe, and sometimes even hazardous.

This discrepance evidently admits but of one explanation, and that is, the particular manner in which dilatation is conducted.

My own experience has convinced me that the great error with regard to dilatation, has been an attempt to do too much at a time, by which the disease has been aggravated instead of relieved. The urethra is, in fact, but too frequently treated as if it were an inert lifeless tube, and not a living structure possessing more or less exquisite sensitiveness.

Who can wonder at the failure of dilatation, when that process is carried on by forcible attempts to stretch a diseased and sensitive part of the urethral canal? It is true that the immediate effect of these forcible attempts may, by opening more or less the contracted channel, permit the urine for a time to pass in a better stream, an improvement, however, but of short duration; as the irritation and inflammation which are almost certain to follow will, in nine cases out of ten, render the condition of the patient rather worse than better.

It is sufficient to observe that this forcible unscientific manner in which dilatation is occasionally practised is the abuse, and not the proper use of this most admirable of all methods of treating the generality of urethral strictures.

It may be taken for granted that this treatment will be most successful in the hands of those who use all possible gentleness and caution in the introduction of instruments. Lightness of hand and delicacy of touch, as well as great patience and forbearance, are indispensible qualities in the surgeon to enable him to do justice to this simplest of all methods of procedure.

I think it will be admitted by those who are most experienced in urethral surgery, that the greatest difficulties they meet with in effecting dilatation principally originates in the previous abuse of instruments.

Many surgeons have their favourite instruments for dilating strictures, some giving a preference to the silver catheter; others, to the solid metallic sound; while the elastic gum, wax, and plaster bougies have also their advocates.

Upon this point I shall only observe that no judicious surgeon will restrict himself to the use of any one of these instruments, as they will most assuredly all be found to be more or less useful, some succeeding best in one case, and some in another.

If, however, I were restricted to the use of but one kind of instrument, my selection would be the simplest of all, the wax and plaster bougie, varying from a consistence soft enough to receive the impression of a stricture, to such a degree of hardness as will not readily yield to pressure.

It must be evident that no rule as to the best method of commencing dilatation can be applicable to all cases. I believe, however, that the one most generally applicable when the contraction is considerable is to commence with the common bougie, and to continue its use until some little progress has been made, when the irritability of the diseased tissue as well as of the entire urethra, will have become so much subdued, as to permit, without irritation, the employment of some more solid, and in many instances, more efficient dilators.

In highly irritable strictures, with few exceptions, the soft wax bougie is infinitely superior to any other dilator; and its use should not be discontinued until a considerable diminution of their irritability has been effected.

Dilatation is usually described under the two general heads of temporary and permanent. When effected gradually by the introduction, from time to time, of bougies, catheters, or sounds, it receives the former appellation. In the latter, dilatation is accomplished by the continued retention of instruments in the urethral canal for certain periods of time, of more or less length, varying according to circumstances, extending sometimes to several weeks' duration. The elastic gum catheter is mostly used in permanent dilatation, being much less likely to cause urethral irritation than metallic instruments.

The selection of either of these methods, and the best manner of carrying them into effect in particular cases, must, of course, depend upon the judgment of the surgeon.

There is another kind of dilatation to which the term "special" has been applied. Particular instruments of various kinds have been invented for the purpose of effecting dilatation more promptly than those in ordinary use.

We have had dilators of water, of mercury, and of air, which have been much lauded by their inventors.

I have as yet had no reason to believe these dilators to be preferable, or even comparable to those in ordinary use, such as bougies, catheters, and sounds, which are much more manageable than the former.

I must not omit to mention two modes of accomplishing prompt dilatation which have lately attracted considerable attention, those of Mr. T. Wakley and of Mr. Holt. The dilator of Mr. Holt is a modification of Perrève's instrument. Mr. T. Wakley's instruments are too well known to need description.

From the strong testimony of their good effects which both these gentlemen have brought forward, it cannot be doubted that in some cases these dilators may be used with advantage to the patient.

I shall merely remark, with regard to their employment, that from the great power and complete command over the urethra obtained by these dilators they should always be used with the caution so strongly recommended by their inventors.

Urethrotomy, or internal division of strictures by the lanceted catheter, and other cutting instruments, has been but little practised in this country. In this method, division is effected either from before backwards, or from behind forwards.

In impermeable cases, the section is made from the front by introducing as far as the stricture a tube containing a sharp blade, which is then thrust forward so as completely to divide the obstruction.

To effect division from behind the stricture various ingenious instruments, consisting of a canula, with one or two cutting blades, have been invented by the French surgeons.

Their employment of course assumes the permeability of the stricture, as in using them they must be passed through the obstruction.

when, by causing the blade or blades to project, division is accomplished as the instrument is withdrawn.

Internal section was principally practised in this country by the late Mr. Stafford, whose instruments, invented for this purpose, are well known. Next to Mr. Stafford, this method was more frequently adopted by Mr. Guthrie than any other British surgeon. It has occasionally, however, been had recourse to by others; but the practice of internal incision of urethral strictures has never been generally adopted in England.

Division of the stricture from behind forwards is undoubtedly the best method of effecting internal incision, having, however, the great disadvantage of being applicable only to such obstructions as are permeable by instruments.

The latter mode of internal section is held in high estimation by many French surgeons whose opinions, however, differ considerably as to the extent to which it is desirable to carry the incisions. By some, very superficial incisions, or mere scarifications are practised, dilatation being afterwards completed, either entirely by the bougie, or with the aid of an occasional application of nitrate of silver. Others practise the free or complete division of the diseased tissues forming the obstruction. The best practical information regarding internal section of urethral strictures will be found in the excellent works of Leroy D'Etiolles and of Civiale, who have had very great experience of its effects.

According to Civiale, to be successful, the incisions must include the whole of the morbid structure. Reybard, whose work on Stricture, which bears the stamp of great talent and originality, to which was adjudged the Argenteuil prize of 1852, boldly advocates the absolute necessity of dividing not merely the stricture, but also the urethral parietes at the seat of disease, leaving only the skin undivided.

M. Reybard's views on this subject cannot be understood without some explanation of his peculiar pathological views regarding urethral stricture. To use the words of his reporter, M. Robert, "Reybard, with all pathologists, considers blenorrhagia as the most common cause of strictures of the urethra; but he goes beyond the received ideas when interpreting the part played by these phlegmasia in their production. According to him, all strictures due to this cause are constituted in all epochs of their evolution by a tissue, anormal, or of transformation, and not by engorgement, by thickening, by induration of the urethral parietes, as is generally understood." M. Reybard considers that "strictures present one invariable structure, and that their diverse forms constitute but one and the same affection."

Most surgeons of much experience in the treatment of urethral stricture will scarcely, I think, admit the general applicability of M. Reybard's pathological views on this subject. It appears to me evident that this distinguished surgeon must have derived his patho-

logical prototype of stricture from one particular form of the disease, in which elasticity and retractility are so strongly marked as to render the ordinary mode of treatment by dilatation unsatisfactory.

I believe, with other pathologists, that the peculiar transformation of the urethra into a structure of new formation, closely resembling in its properties the tissue of cicatrices, is by no means, as M. Reybard supposes, an essential character of urethral stricture. My own experience induces me to believe that although the transformation of strictures into a cicatricial-like tissue may sometimes occur in their early stage, it does not usually take place until a considerable length of time after their formation. I have good reason to conclude that so far from this fibroid transformation being an essential element of the disease, many urethral strictures of several years' duration consist merely of an inflammatory condensation of the part affected. At all events, in many cases in which symptoms of stricture have existed for several years, the bougie has afforded no evidence of the cicatrix-like transformation. I may add that the satisfactory results of the use of the bougie in these cases is to my mind evidence enough that the new tissue which M. Reybard considers as characteristic of stricture, could not then have been formed.

Every surgeon conversant with the treatment of strictured urethra well knows the difficulty in effecting satisfactory dilatation in the truly elastic india-rubber-like stricture. I should not have dwelt so much on M. Reybard's pathological views were it not for the hazardous practice which they have led him to adopt and recommend as the only satisfactory method of treating urethral obstruction.

There appears to me no sufficient reason to believe that there is any peculiar transformation of tissue in urethral stricture which is not the effect of ordinary inflammation.

My own experience of internal section has been but little, and that little not the most favourable, as I have found great difficulty in keeping sufficiently open the aperture made by the knife. Except in cases of urethral contraction at the glans penis, in which, from its peculiar density of structure, free division by the knife is the proper and most effectual remedy, I have resorted to internal section only as a means of immediate relief in urgent cases.

Internal division of strictures at the bulbous portion of the urethral canal has not infrequently been attended with unfortunate results, such as profuse hemorrhage, extravasation of urine, and purulent infection. Mr. Guthrie has informed us that after this operation, "urine may be extravasated, matter may form externally, or be discharged in quantity from within:" he adds, "these are accidents which may befall any one, although they do not often occur; that in whatever manner the urethra may be divided, whether for a stricture only, or for a fistula in perineo, any and every operation may lead to the excitement of a fever resembling ague in its paroxysms, and to the formation of matter in different parts of the body, in a similar

manner to that which I believe I was the first to show did often happen after amputation. It is a misfortune that cannot be avoided; and he is fortunate in whom these depositions of matter occur in parts not essentially vital."

If the contraction should be anterior to the bulb, internal section, when properly performed, appears to be attended with but little risk to the patient. My own practical experience of this method has, however, been so limited that it would be presumptuous in me to give an opinion on the subject, after the strong testimony adduced in its favour by Civiale and others.

External division, or perineal section, from its advocacy by Professor Syme, has now become so celebrated, its merits and demerits have been so fully discussed, that it will be unnecessary for me to make many observations on the subject.

It is well known that this operation was formerly, with some few very rare exceptions, practised only in impermeable strictures, being always regarded as one of difficulty and danger. Mr. Syme has certainly much improved the proceeding by the previous introduction of a grooved staff or director, upon which the stricture is divided. Surgeons were confidently told that all those difficulties hitherto met with in the treatment of urethral stricture were at an end; that a new and royal path had been discovered, which would lead to the cure of the very worst forms of the disease. Perineal section, as described by Mr. Syme, was a "simple and easy mode" of curing permanently the most difficult cases of urethral stricture, and unattended with danger to life. That "division of a stricture by internal incision is sufficient for the complete remedy of the disease in its worst form; that in cases of less obstinacy, but still requiring the frequent use of the bougie, division is preferable to dilatation, as affording relief more permanently and safely."

From such a description, from such high authority, it cannot excite surprise that the new proceeding became, for a time, the fashion. No operation has probably been more fully tested than perineal section. That the sanguine expectations regarding the extraordinary efficacy of this operation should have ended in disappointment is nothing more than has occurred with other remedial measures which have disappointed expectation.

[Mr. Wade remarks that it is to Mr. Whately we are indebted for the introduction and strong recommendation of potassa fusa, as a valuable therapeutic agent in the dilatation of the more obstinate forms of urethral stricture. Its effects are totally dissimilar to those of nitrate of silver, which causes an adhesive form of inflammation.]

I have lately seen expressed an opinion that strictures, in the dilatation of which potassa fusa has been employed, have a greater tendency to recontraction than others in which that remedy has not been used. On the contrary, the application of the potash, by removing

more or less of the thickened tissues, has the effect of diminishing instead of increasing their contractile tendency. This statement is not lightly made; but from a knowledge that in some of the more aggravated forms of hard gristly strictures, in which I was enabled, by the use of potassa fusa, to effect full dilatation after its failure in skilful hands by the ordinary means, the patients experienced no difficulty in preventing a return of the contraction by adopting the precaution of occasionally passing for themselves a bougie or sound.

In my advocacy of the use of the caustic potash as an assistant to dilatation in the more aggravated forms of urethral stricture, I have had to contend with the prejudices of the day, which were all in favour of cutting, and so strongly against the employment of caustic, that to use it was regarded as heresy. Had it not been for this prejudice, the ample evidence adduced by myself and others of the efficacy and safety of the potassa fusa in urethral stricture would surely ere this have led to its more general use in bad cases. It may truly be said that there is much in a name; and had the potassa fusa been called a solvent instead of a caustic, the case would have been far different.

When the potassa fusa is employed as a remedy for the more obstinate forms of hard gristly strictures it must be as an escharotic, and applied much more freely than recommended by Mr. Whately, who gives the following directions for its employment:—"In every stricture, before we apply the potassa fusa, we ought to be able to pass a bougie into the bladder of at least a size larger than the finest kind. A small hole about the sixteenth part of an inch deep should be made at the extremity of a bougie, which should be just large enough to enter the stricture. A piece of broken caustic, half the size of the smallest pin's head, should be selected; the particle cannot, indeed, be too small for the first application. Let this be inserted into the hole of the bougie, and pushed down into it so as to sink the caustic a very little below the margin of the hole. The hole should be contracted a little with the fingers, and the remaining vacancy in it filled with hog's lard. The armed bougie is to be passed once or twice backwards and forwards through the stricture. At the end of seven days the application may be repeated. The operation should be repeated till the contracted part of the urethra is dilated, if possible, to the natural size. I do not in any case apply more of the kali purum at a time than a piece about the size of a common pin's head. If a bougie cannot be passed into the stricture, and it becomes necessary to apply a caustic to the anterior part of the contraction, I should certainly prefer the lunar caustic to the kali purum."

It will be seen that Mr. Whately did not recommend or use the potassa fusa in impermeable strictures. It was in impermeable urethral obstruction that I first had recourse to caustic potash, and very soon became convinced of its superiority to nitrate of silver in such cases. I found that to be effective in old hard gristly strictures, it

was necessary to employ it much more freely than recommended by Mr. Whately, and that this might be done with perfect safety. I have on former occasions stated that the caustic potash may be advantageously applied to strictures for two purposes; one, to allay irritation; the other, to remove the thickened tissues which form the obstruction.

The plan which I adopt is, to commence with a piece of the caustic, the size of a common pin's head, inserted into a hole made in the point of a soft bougie. If the points of the caustic are well covered with lard there need be no fear of its acting before it reaches the stricture. The bougie should be gently pressed against the stricture for a minute or two if impermeable, and then withdrawn. When the caustic is applied to permeable obstructions, the bougie should be passed several times slowly backwards and forwards over the whole surface of the stricture. When applied to permeable strictures, it usually happens that after one or two applications of the caustic the bougie will be found to enter the obstruction. To surgeons who object to the employment of potassa fusa from the fear that the common bougie is not a safe conductor for the caustic, I recommend the employment of the tubes or portes-caustiques, which I sometimes use where there are false passages. A description of these tubes will be found in the Medical Times and Gazette of April 15, 1859.

As all who read this paper may not have read my previous observations on this subject, it may be as well to state that the cases in which I have found the potassa fusa most advantageous may be generally described as:—1. Strictures having a cartilaginous hardness, impermeable as well as permeable. 2. Strictures which bleed more or less freely on the introduction of the bougie. 3. Irritable strictures.

To a long hard gristly stricture it will be necessary to increase the quantity of the caustic; which, however, should always be very gradually done. It cannot be expected that a piece of the size of a common pin's head can have much solvent effect upon a hard surface of half or three-quarters of an inch long.

Two or three mild applications to strictures disposed to bleed on the introduction of the bougie will generally remove their hemorrhagic disposition.

An occasional application of the caustic potash will be found highly useful in highly irritable strictures, much facilitating their dilatation. A case may, however, occasionally occur in which the use of potassa fusa and the bougie alone may disappoint expectation. An irritable stricture when greatly contracted, and complicated with perineal fistulæ, often proves very troublesome, and may baffle the best efforts of the surgeon so long as the patient goes about following his usual avocations. In such case rigors are apt to occur even after the most gentle use of instruments. As the difficulty in accomplishing dilatation in such a case undoubtedly arises from the urine passing over and through the fistulous openings in the urethra, which keeps up

more or less irritation and inflammation at the seat of the disease, it must be remedied by the retention of the catheter, which, of course, requires the confinement of the patient to his room. With this addition to the occasional application of the potash success will generally be obtained. The case must, however, be closely watched, or the retention of the catheter, if not carefully attended to, may do harm rather than good. Time will not permit me on the present occasion to give cases in illustration of this method, or to enter further into details.

It will be seen that my views with regard to this method of treatment differ materially from those of Mr. Whately. I do not use the potassa fusa in all cases indiscriminately, but only in such as do not yield to simple dilatation. I have found it generally necessary to employ the caustic alkali in much larger quantities than he recommended, the minute portions used by him having produced scarcely any perceptible effect upon strictures which, however, yielded to its more free application. But its greatest value is in impermeable strictures, to which Mr. Whately did not consider it applicable. These observations cannot be regarded as disrespectful to the memory of that able surgeon, as all improvements in our profession are progressive.

In concluding this part of my subject, it may be as well to state that the method of treating urethral stricture by potassa fusa was brought forward by me in a paper read at the Westminster Medical Society, on February 15, 1840. It was only after having fully tested its great efficiency and perfect safety in many of the more intractable forms of urethral stricture, that I ventured to bring before the profession my observations on this subject, well knowing the prejudices with which I should have to contend.

The strong testimony which from time to time I have published regarding its efficiency and safety, has, I am happy to say, at length led to its employment by some of our best practical surgeons; and I entertain not the slightest doubt that the potassa fusa will at no distant period be regarded as one of the most valuable therapeutic agents in urethral stricture.

With regard to constitutional treatment, I shall only observe that strict attention to the general health is as necessary in the treatment of strictured urethra, as in other local affections of a more or less serious character; and that the surgeon will do well to bear in mind the principles inculcated in Mr. Abernethy's memorable "Observations on the Origin and Treatment of Local Disease."

In these days of "Conservative Surgery," it may be worth asking how far the employment of caustic potash as a substitute for the knife may be regarded as entitled to any honour in this question. If an operation is the "opprobrium of surgery," any remedy which prevents the necessity of such operation is, at all events, "conservative."

I leave others to determine how far the potassa fusa answers the purpose for which it is intended as a "conservative" agent.

The conclusions arrived at from the preceding remarks may be thus briefly summed up:—

That simple dilatation is the method which should commonly be adopted; and that it will, in the great majority of cases, succeed in affording satisfactory and permanent relief.

There are, however, numerous cases in which the relief obtained by this method will be neither sufficient nor permanent; and in these the patient must depend for any considerable improvement in his condition, either on the application of caustic to his stricture, or on its division by some cutting instrument.

That internal section, when practised anterior to the bulb, is attended with but very slight risk; but when had recourse to for obstructions at the urethral curve, it has not unfrequently proved dangerous.

That external division, whether practised according to the old method, in impermeable, or that of Mr. Syme, in permeable stricture, from its disastrous results, is an operation justifiable only in the most urgent cases.

That Mr. Syme's operation will very seldom be required, it being only applicable to permeable obstructions, as every surgeon knows, that after an instrument has been passed through a stricture, the greatest difficulty of the case ceases.

That in whatever manner a stricture may be divided, to preserve the opening made by its division, in most cases, it will be necessary to have recourse to the regular use of the bougie, or other dilating instrument for a considerable length of time afterwards.

That in intractable cases, as a general rule, I believe that the use of the potassa fusa will be attended with the most beneficial results, rendering it unnecessary to resort to the knife. I am fully convinced it is a perfectly safe proceeding.

In concluding these few brief comments on the treatment of urethral stricture, I can truly say that nothing but my knowledge that the use of the potassa fusa, in bad cases of that disease, will, in most instances, prevent the necessity of resorting to operations attended with more or less danger, has induced me so perseveringly to bring before the profession my views with regard to its employment.

I now again recommend my professional brethren to give the potassa fusa a fair trial in the more intractable forms of urethral obstruction. It must be recollected that, in recommendation of this plan of treatment, it involves no danger; that it is impossible to do harm when properly applied; and that, even should it be deemed necessary to have recourse to the knife, the surgeon will, at least, have the satisfaction of knowing that he has done all in his power to save the patient from a formidable, dangerous, or even fatal operation.—*Med. Times and Gazette, June* 18 *and* 25, 1859, *pp.* 625, 650.

72.—ON LONG-STANDING DISEASE OF THE PROSTATE AND BLADDER.

(Under the care of Mr. Henry Thompson, University College Hospital.)

Enlargement of the prostate is an affection which appears only in advanced life, notwithstanding the impression entertained by many surgeons that it is a disease very commonly met with when the hair begins to turn grey. In relation to this question, Mr. Henry Thompson states, in his recent work "On the Enlarged Prostate," that although it never appears but at the period we have mentioned, yet "it is not, therefore, a natural or necessary concomitant of age. It is, on the other hand, a complaint which the very large majority of elderly men escape. Contrary to the generally received opinion, its occurrence is not normal, but exceptional." (p. 65.) Mr. Thompson's facts prove very clearly that prostatic enlargement, so far from being an invariable or usual change in the aged, is an exceptional condition. We refer to this important fact here because the mistake is often made of attributing retention of urine to hypertrophy of the gland when the patient has reached a certain age. In the following case, however, in which the prostate was four times larger than natural, it produced retention of urine; and we remember a very similar case under Mr. Curling's care, at the London Hospital, some months back.

In the present instance, besides the enlargement, there was much disease, which was participated in by the bladder, producing retention of urine to the extent of five pints. The precaution adopted in this case of drawing it off at intervals, to prevent a fatal syncope, is an essential point which cannot be too much insisted upon; for we have seen, on more than one occasion, a fatal result ensue, in an aged patient, by completely emptying a distended bladder at a single sitting. Mr. Thompson, so far as we are aware, appears to be the only writer who specially draws attention to the subject, and the value of his remarks is our excuse for quoting them entire:—

"In very rare instances, the removal of a large quantity of urine, amounting to several pints, has been followed by fainting and depression, from which the patient has never rallied. When the extent of vesical dulness is very considerable, it is therefore prudent to afford relief in a gradual manner, and, supposing that the catheter is retained, this may easily be accomplished. The removal of some thirty or forty ounces will probably afford complete ease, and after the lapse of half an hour or an hour, another portion may be withdrawn; in this manner the bladder may be gradually brought to adapt itself to the normal condition of contraction, which subsequently, as a rule, must be ensured at least once or twice a day." (p. 180.)

The interest and importance, therefore, of the subjoined case will be at once recognised, for the patient was not only aged, but weak

and debilitated. A fatal syncope was averted by the treatment adopted, but, owing to other causes, he succumbed nine days afterwards.

An extremely infirm old man, aged seventy-eight years, was admitted for relief of retention of urine on the 27th of April, 1859. Several attempts had been made before his admission to pass a catheter, but without success. Mr. Thompson, being in the ward at the time, examined him immediately, and found the bladder forming a large tumour, reaching to the umbilicus. The patient was suffering great agony, and was much exhausted. He passed a No. 9 silver catheter without difficulty into the bladder, when a quantity of dark-coloured and fœtid urine flowed. The patient showing signs of increased weakness, and the pulse, which was carefully examined throughout, becoming very feeble, thirty ounces only were withdrawn, and the catheter stopped, and tied into the bladder,—Mr. Thompson remarking that a large quantity of urine remained in the bladder, and that in such a subject it was extremely dangerous to withdraw more than a moderate quantity at a time. He stated that he had known death from syncope to occur through neglect of this precaution. The prostate was found to be considerably enlarged by rectal examination, and the bladder pressing down into the bowel from extreme distension. An hour afterwards, he withdrew rather more than a pint, and four or five hours afterwards, more than two pints and a half, which emptied the bladder. More than five pints had thus been withdrawn in the same number of hours. The catheter was left in. Stimulants and strong fluid nourishment to be taken freely.

April 28th. The silver catheter was exchanged for a gum catheter. The patient much better, and expresses himself as greatly relieved.

29th. The gum catheter having slipped out in the night, it is found that he has no power to void any urine by his own efforts. It is replaced, and a piece of India-rubber tube, about four feet long, is attached to the mouth of the catheter, the other end of the tube being placed in a vessel beneath the bed. Mr. Thompson is in the habit of adopting this plan, which effectually prevents the bed from being wetted, and carries off offensive urine to any distance from the patient which the condition of it may make desirable. In this case, the urine is extremely fœtid, and loaded with muco-purulent matter.

[The patient gradually sunk, and died on the 5th of the next month. The prostate was found enlarged and indurated, the bladder sacculated and hypertrophied; kidneys congested; ureters not enlarged.]

[The following is from Sir B. Brodie's Lectures on the Diseases of the Urinary Organs (p. 205, fourth edition, 1849.) He strongly enforces the necessity of avoiding the sudden emptying of the bladder in cases of great distension of that viscus. He observes:]

"The resemblance between the effects produced by the use of the

catheter, in the way and under the circumstances which I have just endeavoured to describe, and those which follow the operation of lithotomy in a patient similarly circumstanced, is too obvious to be overlooked; and I conclude they are to be referred to a common principle. The system suffers from the shock of the operation in one case, and in the other case it suffers in the same manner from the impression made on it by the sudden emptying of the over-distended bladder, and consequent removal of the pressure which is made, through the medium of the dilated ureters, on the glandular structure of the kidneys.

"Here, then, arises an important practical question. The patient has no chance of recovery without the use of the catheter. Are we to leave him to his fate? or are we to empty his bladder at certain intervals, at the risk of hastening his dissolution? I have no doubt that we may, in many instances at least, obtain the good and avoid the evil, by a slight modification of the treatment. Let the catheter be introduced at first, so as to draw off only a portion of the contents of the bladder, and let several days be permitted to elapse before it is completely emptied; care being taken at the same time to uphold the general health by the exhibition of ammonia, quinine, and other tonics, exhibited according to circumstances, and combined with the prudent use of wine or brandy, and a plain but nutritious diet."—*Lancet, June* 18 *and* 25, 1859, *pp.* 610, 639.

73.—ON SOME OF THE DIFFICULTIES ATTENDING UPON THE TREATMENT OF STRICTURE OF THE URETHRA.

By Henry Smith, Esq.

In the Medical Times and Gazette for August 21 of last year, I detailed at length a case of obstinate stricture of the urethra, which was remedied by dilatation, and careful general treatment, after the patient had been condemned to undergo the operation of external division of the canal by a surgeon of large experience, under the idea that there was not any other method of relief. At that time I made some observations referring chiefly to a feature of difficulty which the case detailed particularly illustrated, namely, the almost insuperable rebelliousness to dilatation, which is every now and then met with in certain instances of this affection. I was enabled to show that a case of the most obstinate and unpromising nature might, by careful treatment, be made to yield, without recourse being had to the knife, although both the patient and his surgeon were convinced that it was the only remedy.

[Though generally the improvement in the stream of urine is commensurate with the mechanical progress, yet occasionally cases occur in which there is an absence of improvement in the power of passing the urine, although dilatation has been carried on in a satisfactory manner.]

Next to extreme irritability of the urethra, this one feature of absence of improvement in the stream, has been a source of greater difficulty and annoyance than anything else. Among a considerable number of very severe cases of stricture which have lately been under my care, my attention has therefore been much directed towards ascertaining its cause, and removing the symptom, if it may be so termed. In some cases it has not been difficult to account for it, as where one or more fistulous sinuses exist; when such is the case the bladder may be healthy and the urethra be fairly dilated, yet the patent condition of the artificial openings, which take so long to close, allows the greater portion of the urine to percolate through them, little comes through the urethra, and that little in any volume. In instances of this kind the patients may be assured that the stream of urine will increase as the sinuses close up, slowly as that event is too often known to take place.

There are, however, other cases of severe stricture, uncomplicated with fistulous openings in the perineum, where the surgeon has been able to carry on dilatation in a satisfactory manner, and to such an extent that a good-sized catheter may pass, and yet there is either no improvement at all in the stream, or, if any, it is so slight as to be almost inappreciable. This obtains also not only in instances of stricture in persons of advanced age and of debilitated power, but it is occasionally met with in patients either in the very prime of life, or in those not much above adult age. It is in some of these latter cases that it is extremely difficult to understand the meaning of this symptom.

It is considered by some men of large experience that it is the bladder alone which is in fault; that it has become weakened and dilated by the persistence of the obstruction in front; and that, even when this latter has been removed, the viscus does not recover its tone sufficiently to expel its contents in an effectual manner. That this is the true solution of the question in some instances there cannot be much doubt; but I am induced, by careful observation, to believe that in a considerable number of these cases the loss of power in the bladder is more apparent than real, and that the impediment to the volume and flow of the urine is in the urethra itself, notwithstanding that dilatation has been carried on to a measure with which the passing of urine in a small stream, or in drops even, seems almost incompatible. I have noticed that this very distressing feature has existed both in instances where the stricture has been exceedingly difficult to penetrate, the canal not being especially irritable, and in those cases where there has not been very much difficulty in overcoming the obstruction; but the urethra has been extremely sensitive. I have, moreover, noticed, especially in the latter cases, that more than a single stricture has existed; that there has been one near the meatus, or one or two inches from it; and as a rule, with but rare exceptions, the anterior stricture or strictures have been found to be most irritable and unyielding.

In such instances as these it is extremely difficult to overcome the irritable condition of the urethra, and to dilate the canal; and then, after this has been accomplished to such an extent that a No. 8 or 9 catheter is introduced, there is the mortifying result of little or no increase in the stream of urine, or even of a diminution in size. Now, I believe that in such instances, especially where the patients are young or the stricture has not lasted long, the fault is not in the bladder, but that that organ expels the urine with its wonted power, and that the fluid coming in contact with the irritable portion of the canal—although it has been dilated to the extent mentioned—causes it to contract forcibly, and thus produce the fine stream observed. Careful examination of the urine in these cases shows absence of any disease of the bladder; and moreover, it will be seen that, small as the stream is, it is expelled with considerable force and continuously; which circumstance will not be produced, I apprehend, by the mere action of the urethral muscular fibres, whether voluntary or involuntary. In a very well marked case of simple loss of power in the bladder lately under my care, in the person of a very fine young officer, all the symptoms of stricture were present; but there was hardly any impulse at all given to the urine as it was being evacuated, and the patient was compelled to strain violently. There was not the least obstruction in the urethra itself, and by well emptying the bladder artificially, and by attention to the general health, this viscus gradually regained its tone, as evidenced by the increasing size and force of the stream.

In the treatment of the cases I have been considering, much patience is required, both on the part of the surgeon and the sufferer; for, as I have before stated, the latter is too apt to be greatly disappointed at the little improvement which is perceptible, and in his distress is too liable to be misled into undergoing some heroic treatment which may either destroy his life, or give relief merely for a brief period. It is only by the continuous dilatation of the diseased canal to as great an extent as it will admit of, that the result so much desired will be obtained. If the patient is not advanced in years, or has not had stricture for a long time, he may be assured that a persistence in the treatment will be attended with satisfactory results; sometimes the desired relief will happen suddenly, at other times, and most frequently, the increase in the power of urinating will be only gradual, but will not be marked until an instrument of considerable size has been introduced. When, however, the features of the case indicate that the want of stream is due to a loss of power in the bladder, a long time elapses before the organ recovers itself, although the urethra has been well dilated by the surgeon, and is kept patent by the sufferer himself. It is especially important in these cases to attend to the general health; for it will not unfrequently be found that this has suffered much, and that the loss of power in the bladder is but a symptom as it were of constitutional debility, rather than the mere result of an obstructed urethra.

Sometimes it happens that in a severe case of stricture the earlier attempts to dilate are attended with an improvement in the stream which is satisfactory to the patient. Then this improvement ceases, and does not show itself again for a long period, although the dilatation may be steady and progressive. When such a circumstance occurs there can be no doubt that the bladder is not in fault; but that it depends upon the irritability of the urethra, or an insufficient dilatation of the stricture. Without going into details, I may mention a case of a patient, aged 45, who was under my care from December to April; the stricture was of fifteen years' standing and situated in front of the bulb. Treatment at the hands of various surgeons of experience had been pursued, one of whom had performed internal incision on two occasions. The urethra, moreover, had unfortunately been wounded on one occasion through the stilet of a gum-elastic catheter escaping from the instrument. I commenced the treatment of this difficult case by dilating with silver catheters. The size and power of the stream of urine increased in proportion with the instruments, until I had got up to No. 4 and 5; but subsequently to this there was a good deal of irritation, and when a No. 8 or 9 had been introduced, the stream of urine was not larger than when a small instrument had been passed. Dilatation was, however, patiently persisted in, and after No. 10 had been introduced the size of the stream again increased and continued doing so until I had arrived at No. 13, when I dismissed him, able to pass his water in a good stream.

This case is interesting, as illustrating not only the particular point I have been dwelling upon, but it shows also how utterly useless is the practice of internal incision, in remedying a stricture for any length of time.

The practice of external division of stricture, which a misapprehension of some of the symptoms and an insufficient reliance upon the power of dilatation and other agents, was the means of bringing into use a few years since, has now been proved beyond all doubt to be so dangerous to life, and so inefficient to produce the complete remedy once so vaunted, that it may hardly seem necessary to consider this subject here.

I have before enunciated the opinion that not only does this operation not prevent the return of the stricture, but that the re-contraction becomes more severe than before.—*Med. Times and Gazette, Aug.* 13, 1859, *p.* 157.

74.—ON THE EMPLOYMENT OF EXTRACT OF BELLADONNA IN THE TREATMENT OF IRRITABLE BLADDER.

By Henry Behrend, Esq.

[Cases of irritable bladder seem to be on the increase, especially among the wealthier classes of society—the disease being much pre-

disposed to by enervating and luxurious habits. Numerous authors within the last two or three years have borne testimony to the efficacy of belladonna in the treatment of this affection. The success of the treatment in the following case is striking.]

The patient was a married lady, without family, about thirty years of age. Some five or six years ago she had suffered from acute dyspepsia, but shower-baths and horse exercise had completely cured her, and she had enjoyed uninterrupted good health until about two years ago, when she was suddenly, and without any assignable cause, attacked by the complaint for which she first consulted me in August 1858. Previously to its commencement, which was in May, 1857, she had always slept remarkably well, and had seldom or never been disturbed during the night; but during the last fifteen months, the irritability of the bladder had been so great as to render the immediate evacuation of its contents imperative at least three or four times during the night, and often as frequently as seven or eight times, or even more. During the day, there was little or no irritability, and the quantity of urine passed was normal, or nearly so; but in the course of the night, two or three times the natural amount was passed, pale, insipid, and, when tested, free from sugar, albumen, or other abnormal constituents. The combined effects of the loss of rest and the drain of fluid from the system had materially affected her general health. She had lost flesh, and suffered much from thirst, headache, and nausea, especially upon rising in the morning. She was much depressed in spirits, and took a desponding view as to the ultimate result of the malady. I prescribed successively the tincture of the sesquichloride of iron, compound tincture of valerian, tincture of hyoscyamus, liquor potassæ, dilute mineral acids, sea-bathing, and change of air and scene, without the least amelioration of the symptoms; and upon her return to town at the commencement of October, I decided upon giving the extract of belladonna a trial. She began taking it in doses of the twelfth of a grain three times a day in the form of a pill, and was at this period always disturbed four or five times in the course of the night, and often much more frequently. The belladonna was at once increased to the third of a grain three times a day, or a grain in all, as soon as I found that its use was not forbidden by any peculiarity of constitution. These doses were continued for about six weeks (with the occasional intermission of a day or two), at the expiration of which period its toxical effects began to manifest themselves; for though the pupils were not dilated, yet vision was not normal; black spectra appeared; the mouth and fauces were parched and dry, and there was occasional nausea. Already the improvement in the symptoms was decided; my patient slept better, and was never disturbed more than three times in the night.

As it is a recognised fact, that in order to obtain the full amount of benefit from the belladonna, it must be pushed until its specific

symptoms are quite established, I now increased the daily amount taken to a grain and a half, in the proportions of half a grain in the morning, and one grain at nine P.M. In the course of three or four days, the pupils became dilated, the nausea extreme, and there were repeated efforts to vomit, for the most part ineffectual, but occasionally followed by a little glairy mucus. The irritability of the bladder became almost entirely subdued; she was disturbed once only, or at most twice, throughout the night, and the quantity of urine passed was normal, or only occasionally slightly increased. The belladonna was at once discontinued, the general health rapidly improved, and during the past six months the cure has been permanent, and my patient has continued perfectly free from any recurrence of her distressing complaint, except that a slight tendency to irritability of the bladder manifests itself now and then, for one or at most two nights in succession, but passes away of itself, and is not of sufficient consequence to require any treatment.—*Lancet, June* 25, 1859, *p.* 630.

75.—*On Amputation of the Penis.* By THOMAS P. TEALE, Esq., Surgeon to the Leeds General Infirmary.—[In a note on this operation, referring to the difficulty which is not unfrequently experienced after amputation of the penis in keeping the orifice of the urethra open, Mr. Teale remarks:]

To obviate this difficulty the following simple plan has been adopted, and, as far as I have observed, invariably with success. After the operation of amputation of the penis has been performed in the ordinary way, a director is introduced into the urethra, and by the aid of a bistoury the urethra and skin covering it are slit up to the extent of about two-thirds of an inch. A single suture is then placed on each side of the slit uniting the mucous membrane to the skin. Perfect patency is thus given to the orifice, which is of a long oval form; and, after cicatrization is complete, there remains a free opening into the urinary canal. Hereby, the free discharge of urine is secured, without any mechanical aid being required, not only during the days immediately after the operation, but also after the cure is complete.

I have adopted the same plan with equal success in the treatment of obstinate stricture at the glans penis. Cases of this kind are occasionally met with in hospitals, resulting from the cicatrisation of sores within the urethra near its orifice. These strictures are readily relieved by bougies, and, the patient instructed in the use of these instruments, might easily keep the passage open; but he neglects to do so; the disease relapses, and he presents himself again and again at the hospital. Such cases I have seen permanently relieved by slitting up the urethra to the extent of two-thirds of an inch, and uniting the mucous membrane and the skin on each side by a single suture.—*Med. Times and Gazette, Oct.* 8, 1859, *p.* 354.

76.—*Silver Wires in Hydrocele.*—We have previously referred to the subject of the treatment of hydrocele by the passage of wires through the sac, which plan of radical cure has proved successful in several cases under Mr. Pollock's care, at St. George's Hospital. On the 12th of August, he tapped a very large hydrocele of the right side in an elderly man, and withdrew about thirty ounces of fluid, containing a large proportion of cholesterine. A needle and wire were then passed through the canula and out of the sac. The canula being withdrawn, the wire was then tied, and thus formed a seton. A second case of hydrocele of the right side was likewise tapped, six ounces of fluid evacuated, and the same process adopted of introducing a wire seton.

These two made the fourth and fifth cases thus treated, and with success. The first instance was an example of encysted hydrocele of the cord, five months ago, the patient being in the hospital a week. No irritation was caused by the wire, but it produced an amount of consolidation of the parts sufficient to obliterate the cyst. The second and third cases were those of ordinary hydrocele. In these, however, there was not the same power of bearing the wire, and it had to be removed in forty-eight hours; in one it nearly produced suppuration; but at the same time the sac in each was obliterated.

Mr. Pollock considers the advantage of using the wire seton to be, that the patient suffers much less pain than when the sac is injected with iodine; in other respects, the results are about the same.—*Lancet, Sept.* 10, 1859, *p.* 266.

DISEASES OF THE SKIN.

77.—ON THE USE OF PIGMENTUM ALBUM IN SOME CUTANEOUS MALADIES.

By Alfred Freer, Esq.

I wish to call the attention of the profession to the great value of white paint as a remedial agent. The preparation itself is nothing more than a mixture of linseed oil and carbonate of lead, rubbed up into a semi-liquid substance. I first became acquainted with its great efficacy in the treatment of erysipelas by my late father, and by my brother. It is, indeed, in this disease that the most striking benefit results from its application. I have never yet met with a case of this nature where it has not done immense good. I find it far superior to lead lotions, mucilage, hot fomentations, nitrate of silver, or collodion. After erysipelas, the paint proves of the greatest service perhaps in eczema in its several forms. In chronic eczematous eruptions of the aged it affords much comfort, and often speedily effects a cure. Of late years I have extended its employment to other complaints of the skin, including herpes in its several forms. I have tried it in some cases

of small-pox, with the view of diminishing the number of vesicles on the face, and of controlling their size. The latter indication it seems likely to fulfil; but I cannot speak with confidence about the former, the papules being already numerous at the time of my visit. I have also used it in several cases of carbuncle and furuncle. The first was in an instance of a huge carbuncle, situated on the loin of a man, and rapidly extending, notwithstanding free incisions, linseed poultices, and appropriate constitutional treatment. I applied a thick, wide circle of paint round the swelling, and dressed with resin ointment and cotton wool. There was no advance of the disease from that time, the centres rapidly broke up, and recovery took place. It is, however, probable, that the omission of the warm poultice may have contributed to the improvement, for I have often observed that warm poultices, however well made, seems to foster and spread carbuncular inflammations.

The paint seems to act in two ways: first, and chiefly, as an efficient excluder of the air—that great irritant to the cutaneous surface when disordered; and, secondly, as a direct sedative to the sentient nerve filaments, rendering them less prone to become involved in inflammatory action. In boils it relieves the painful tension, and favours resolution. In some forms of painful ulcers of the leg, of a small size, it gives great relief. In galling of the skin, where anasarca is present, it is also of use, and is the best application that we have in burns of the first and second degree. But it is in erysipelas that its triumph is most manifest; the patient soon finds the comfort of it; the tight shining skin soon becomes wrinkled and shrunken; indeed, the inflammation very rarely extends after the second or third painting.

All my friends to whom I have recommended the pigmentum album speak highly of it; and one, who is a surgeon in the Peninsular and Oriental Company's service, has used it for the last two years with great success. The manner of applying it is by means of a feather; painting the affected parts, and *a little beyond*, and laying on a fresh coat every two hours or so, until a thick layer is obtained, and then sufficiently often to maintain a covering. In erysipelas, it peels off in a week or so with the shed cuticle, leaving beneath a smooth, clean, healthy surface. Patients are struck with the benefit they derive from its employment.—*Lancet, June* 18, 1859, *p.* 610.

78.—ON INCISIONS IN ANTHRAX.

By Maurice H. Collis, Esq., Surgeon to the Meath Hospital, and County Dublin Infirmary.

The incision into anthrax, whether made early or delayed till sloughing has done part of the surgeon's work, must be deep rather than extensive. Usually it is said anthrax is a flat swelling, The fact of its flatness, or rather of its extent, hides the real amount of

elevation, which is, in most case, considerable. Hence incisions into anthrax seldom go down *through* the inflamed skin and areolar tissue. But even if they did go down to the fascia, they would fail in effect unless they also went through it. The fascia is highly inflamed in anthrax; in fact the essential difference of anthrax from furuncle consists in the inflammation being deeper and implicating the fascia. When fascia is inflamed, much plastic exudation takes place, both in its substance and under it; and the tendency of anthrax to spread indefinitely is to be thus accounted for. The pent-up plasma, quickly producing pus and slough, can get no vent until there is an adeqnate opening in the fascia, and this opening should be made by the surgeon as early as possible, if he would avoid the unpleasantness of useless and repeated cutting, and the extensive sloughing which will occur if he neglect to make it. Plastic exudations find great facility in travelling under the fascia, dissecting and destroying its vascular connexions, and ultimately causing much of it to perish. This is well known, as a general principle of surgery, and it is strange to find it overlooked as the cause of the spread of anthrax. We readily acknowledge the mischief it does in periostitis, in diffused inflammations of erysipelatous character or connected with paronychia, and in many other analogous cases; but books of surgery are, for the most part, silent about it in the case of anthrax. And yet every one must have observed phenomena which can only be explained by it. The extent and mode of extension of the swelling, the real depth to which the surgeon must cut if he is to do good rather than harm, and the fact of large flakes of fascia ultimately coming away as dead core (in addition to areolar tissue), leaving the underlying muscles bare, must have been often observed, and must often, doubtless, have had their influence on the practical observer; but the junior surgeon and the pupil have not been shown their practical bearing. The rule I have given above, to cut deep rather than wide, is founded on the observation of these facts, and will be found satisfactory, saving the surgeon the opprobrium of cutting twice or oftener without benefit to his patient. It is very easy to know when we are deep enough; by taking hold of the flaps made by our crucial incision, we feel if they are quite loose. Our incision is not deep enough unless we can lift up the point of each flap with ease from the parts underneath. This cannot be done unless our knife has gone through the fascia, and made a crucial incision in it almost as extensive as in the skin. The wounds we have made should be almost as deep at their extremities as in the centre, where they intersect. If we have made our incisions early, before actual sloughing has commenced, as we sometimes, though rarely, have an opportunity of doing, the flaps will curl up if the wound is deep enough, and will leave a widely gaping wound; but if we do not see the anthrax until more or less of the skin is undermined and dead, the gaping of the wound will not be so marked, and the best test is the one I have given above, of lifting the flaps with a

forceps, and proving that they are loose. If this rule is followed, we shall have few cases in which we must come and cut again.—*Dub. Quarterly Journal, Aug.* 1859, *p.* 205.

79.—*Chlohydric Acid in Cutaneous Affections.* By M. KLETZINSKI.—From a great number of experiments made with different agents, it results, according to the author, that none provokes or stimulates the cutaneous perspiration more than chlohydric acid. A portion of the skin wet with this liquid perspires in the same time, and under the same circumstances, 27 to 30 per cent. more carbonic acid, and, what is remarkable, 7 to 12 per cent. less water, than the same portion not wet. The author concludes that,

1. The chlohydric acid re-establishes the circulation of the blood when it is periodically interrupted, and accelerates it. It consequently cures chilblains, and even prevents them.

2. It diminishes the uncomfortable sweatings of the hands and feet, and causes them to cease entirely after a long-continued use of it.

3. It is employed with success for the following diseases of the skin: *acne sebacea, nævi, condylomatas.*

4. It does not injure the skin in any way, if properly used; on the contrary, it softens it, and can be regarded as a real cosmetic.

When employed, it should contain neither iron nor chlorine. It is used as concentrated as the patient can bear without feeling a burning sensation, and after thirty to sixty seconds the wet part is washed at first with pure water, and then with soap and water. For application to very sensitive parts of the skin, the acid should be greatly diluted with glycerine, and neutralized in a very short time.—*Echo Médicale.—American Med. Monthly, June* 1859, *p.* 460.

80.—DISINFECTANT POWDER FOR GANGRENOUS SORES.

[The authors of the discovery of the powder which has been pretty extensively used in Paris are MM. Corne and Demaux, the former a medical practitioner in the south of France, and the latter a veterinary surgeon.]

This disinfectant, or absorbent, is composed of two very simple substances in given proportions, viz., 100 parts of common plaster of Paris, with from one to five parts of coal tar. These two substances are triturated in a mortar, or by means of some other suitable mechanical apparatus, the result being a greyish powder, having somewhat the appearance of prepared chalk, and possessing a moderately strong bituminous odour. It may be applied to the surface of sores simply in the shape of powder, or it may be used in the form of an ointment produced by combining the powder with a certain quantity

of olive oil, the consistency being determined by the greater or less quantity of oil employed in its preparation. The oil (unlike water, which would set the plaster,) causes the particles simply to cohere in such a manner that it, by the gradual elimination of the oil, still retains the property of absorbing the pus so long as it remains in contact with the suppurating sore; a certain portion of the ointment is spread over a piece of rag proportioned to the dimensions of the sore, and is applied to it either directly, or a layer of some thin texture is made to interpose, according to the nature of the case or the object contemplated. Its direct application to a sore does not produce the slightest irritation. According to Velpeau, this application, besides absorbing the pus and other morbid products engendered on the surface of sores, possesses the double advantage of disinfecting them, and so favours cicatrization. I have followed MM. Corne and Demaux in their experiments at La Charité, and have carefully observed the effect produced on different kinds of sores by their new mode of dressing; and on the whole, I have been very favourably impressed with it. I do not, however, wish to be rash in forming my opinion as to its merit until it shall have been more severely tested. One thing I have remarked, viz., that its application to sores of the most unhealthy and fetid description, is immediately followed by the disappearance of all smell; but whether this is owing to its chemical action on the morbid product, or simply to its absorbent power, or to its bituminous odour predominating over every other, I cannot say, this being a question which remains to be settled by practical chemists. I have seen the powder applied to anatomical specimens in an advanced state of putrefaction, and the consequence has been the apparent arrest of the putrefactive process, together with the destruction of the peculiar odour which accompanies it.—*Med. Times and Gazette, Sept.* 3, 1859, *p.* 237.

81.—*Lupus Superficilias.*—We have watched with some interest the treatment of a case of the superficial form of lupus in a young man twenty-two years of age, who has been an inmate of the Charing-cross Hospital since the 22nd March, under Dr. Willshire's care. The superficial layers of the dermis of the entire face and cheeks were affected, and at one time the disease was present on his neck also, the duration of it altogether being fourteen years. As our readers are aware, the skin assumes a red and angry look, with exfoliation of the cuticle and gradual thinning of the integument. It is characterized, too, by the absence of tubercles and scabs. The treatment pursued here consisted of the internal administration of arsenic, dulcamara, elm-bark, and of cod-liver oil, the latter being likewise used as a local application. A really wonderful effect has been produced in the disease in a short time: the redness is diminishing and slowly disappearing, exfoliation has almost ceased, and the

healed-up skin is assuming a thin and shining appearance, somewhat resembling ambustial cicatrices. Some authors think this form of lupus essentially scrofulous.

Whilst on the sub;ect, we may refer to another case, in an old woman, under Dr. Willshire's care, at the Royal Infirmary for Women and Children, wherein the disease has assumed the more severe form of lupus exedens. Arsenic is given internally, and the cod-liver oil is freely applied externally, with benefit, as the ulcerations are healing up. Dr. Willshire is using the extract of larch bark, in many different skin affections, in five-grain doses; it is a remedy of much value.—*Lancet, Aug.* 20, 1859, *p.* 186.

82.—ON SLOUGHING BED-SORES IN CASES OF PARAPLEGIA.

By Dr. Brown-Sequard. (Being part of a lecture on Paralysis).

It is remarkable that sloughing often occurs at a part in which there has been no pressure. We have hitherto considered sloughing to be due to the pressure on the paralysed part, but this explanation of sloughing cannot be admitted. If it were only pressure that was the cause of sloughing, we should find it coming on after a long time—after fifteen days or a month; whereas, we know that in fact it sometimes comes on a very few days after the injury to the spine, when it could not possibly have arisen from pressure. Neither can it be caused by the urine having come into contact with the part. Sloughing, therefore, must arise from some other cause, and that cause must be irritation of the cord—a fact which I have ascertained by experiments on animals. I have observed also a case in which, in consequence of a severe blow on the forearm, the patient suffered something similar in the formation of phlyctaenæ on the hand, which, on breaking, became ulcerated. In my experiments on animals, I found that injury of the cord was followed by this sloughing in parts not subjected to pressure. Seven or eight cases of this kind have been recorded. I have also ascertained, by similar means, that this sloughing may be prevented; or if it has already occurred, that it may be cured, sometimes with great rapidity. The means I have employed and found to be most successful to prevent the formation of sloughing in an animal, when it has begun and not gone very far, are very simple; they are quite in accordance with the views I entertained on the subject, and have fulfilled more than I expected from them. My treatment is, alternating hot and cold applications. I apply sometimes eight or ten times a day morsels of ice to the parts threatened or affected, and then after the application of the ice, which of course causes contraction in the blood vessels, I apply a kind of poultice which is very hot, and of course produces a reverse effect. By these alternations of extreme cold and heat, I produce a change in the circulation of the part, and

a consequent change of the nutrition. This mode of treatment I have found to be effectual in preventing sloughing from irritation of the spinal cord. I have seen sloughing in a dog, which had gone almost to the bone, cured in two days. The sloughing was stopped in its progress, and from that time there was no recurrence of it. In other animals, where the disease had not progressed so far, the cure was very rapid indeed. Another means which I have employed, and which I have found to be efficacious, is the galvanic current. This does much good, but it has not the power of the alternative treatment with ice and hot poultices of which I have spoken.—*Dublin Hospital Gazette, July* 15, 1859, *p.* 212.

83.—ON THE IDENTITY OF PARASITIC FUNGI AFFECTING THE HUMAN SURFACE.

By Dr. Wm. Tilbury Fox, London.

Two statements I am going to make will be received with suspicion; I therefore do not utter them without being perfectly satisfied of their correctness. Any reason to doubt their truth would at once prevent my stating them.

Twice, in hunting about between the epithelial lining and the hair in severe tinea tonsurans, where the sporules were plentiful, I met with some largish oval sporules (achorion ?), accompanied by certain bodies (five or six) which resembled the *sarcinæ ventriculi*, and seemed to be produced by the junction of four cells. (I had before observed occasionally two or three sporules joined together, and the effect of the reagent has been to swell them up, and obliterate in great measure their distinctness as separate cells.) So much did the resemblance to sarcinæ hold good, that had they been found in vomited matter, no one would have hesitated in instantly pronouncing them sarcinæ. It was the peculiarity of their seat alone which gave rise to doubt as to their nature. They were, perhaps, small, and the angles slightly more rounded than usual, if there was a difference.

Again, on one occasion I observed an appearance exactly resembling the torula, sprouting from the bottom of the follicle.

Arnsted, of Christiana, seven or eight years ago described a fungus as occurring in favus, which, from its likeness to the corn parasite, he called puccinia favi. Mr. Hogg has noticed it in tinea tarsi. I have been unable to find it at present, but have noticed a condition of mycelium not unlike it, and which might be mistaken, I can conceive, for the puccinia. The mycelium sometimes *seems* to increase in breadth at the expense of the length, so to speak, and hence it becomes very short and broad—as though it were growing in a confined space, and unable to elongate. There is nothing in the microscopic history of the parasites of the human surface which contradicts the reasona-

bleness of the opinion which regards them of one common nature (identical); and the minute differences may be readily explained by the variation in the several concomitant conditions of secretion, heat, and the like. Viewing them generally, as a whole, the tineæ do form a tolerably perfect series; and whatever may be said to the contrary, there exist undoubtedly connecting phases between many of the separate varieties.

This mode of reasoning may be deemed deficient, but it may still be urged that these different appearances are really insufficient to establish the existence of different fungi, which occur (promiscuously) in the various forms of tinea. Well, what does clinical evidence say? Will one variety produce another? Are the tineæ mutually producible?

First, in regard to tinea favosa.—I remember Dr. Jenner telling his clinical class, some time ago, that at one time was admitted into the Children's Hospital a case of favus. No one caught the disease, though the children played together. But by and bye in came a case of herpes circinatus. Several children were attacked by it, and at once two of them had T. favosa. Well, this looks as though the herpes circinatus were contagious. The parasite in the herpes circinatus was better adapted to grow on the soil it found than the more developed condition of fungus in the favus; and increasing in the usual manner (circularly) in an apt subject, herpes circinatus resulted. The achorion (favus) required a better soil than existed before the admission of the herpes circinatus. It would be interesting to know if there were any case of severe eruption in the hospital at the time the favus was there; if so, we should have *expected* favus to have been produced in the eruptive subject. The facts show the relation which favus bears to the other varieties, and contain suggestions for future inquiry. A case has been mentioned of T. tonsurans, in which, by producing secretion by irritation, a favus crust was formed. Hebra believes that favus and tinea tonsurans are identical (different stages of one disease). Müller, Retzius, Remak, and Lebert, classify the achorion with oïdium.

Now as to tinea tonsurans.—Mr. Hutchinson's observations tend to show that the growth of the trichophyton may produce chloasma. He asserts that he has traced the communication from the scalp of infants at the breast affected with tinea tonsurans, and the proof seems sufficient; but I believe also that chloasma may be produced by the implantation of the oïdium albicans. Guersent, I think, some years ago, hinted that "thrush" might be communicated from the child to the mother's breast. I recorded a case in my former paper, which was observed very closely from the outset, and which, I believe, arose from the growth of the oïdium. The case was that of a young woman, a patient in the General Lying-in Hospital. No tinea was or had been present, but almost all the infants in the hospital suffered *severely* from thrush, and the child of the patient in question

was, amongst others, attacked. Taking all the facts into consideration—the seat, the mode of onset, and the negative evidence—the conclusion that the chloasma of the mother was caused by the implantation of the fungus of the thrush seemed inevitable and certain. The patient herself was a little "out of sorts," and perspiring freely.

Herpes circinatus (parasitic variety).—We know favus may spring up in a patch of herpes circinatus. The latter may also give rise to T. tonsurans. Very recently a case of H. circinatus (parasitic) of the forehead and temple, in a young woman (out of health), came under my notice. The minute characters of the patches where those of T. tonsurans, which are always displayed by parasitic herpes circinatus. Now, curiously enough, the disease extended upwards, and at length reached the scalp, where it altered its aspect, assuming all the naked-eye and minute appearances of T. tonsurans. The herpes circinatus, reaching the scalp, became, so to speak, T. tonsurans. Be as sceptical as one might, the case seemed to have left no room for doubting the intimate relation existing between the two affections. From what I have seen of herpes circinatus, I think there is good reason to believe that it may give rise to sycosis. The case above seemed to exemplify this in a singular manner. It so happened that on my own lip were two or three vesicles of *simple herpes*, just disappearing at the time the case came to me. I spent a good deal of time in examining the patches closely with a common lens, from day to day, and the fungus by some accident became implanted upon my face—at least I presume so, for the herpes became very irritable and inflamed, and pustular; indeed, unless I had used pretty active treatment, a promising patch of sycosis would have sprung up. The hairs at their *cut ends* were actually split up by the fungus, which was making its way down the follicle. The whole disease consisted only of three or four pustules, still the effect and presence of the fungus were diagnostic.

Again, "sycosis" in its turn may be produced from tinea tonsurans. Some time ago one or two members of a family became affected with well-marked tinea tonsurans; the father subsequently had not tinea tonsurans, but sycosis, (in all probability produced by contact with the children.) Dr. Lowe has given evidence of the production of favus and sycosis from the implantation of the yeast-plant. But recently (April) the grandmother of a numerous family, seven of whom were the subjects of tinea tonsurans, presented herself with a large patch of parasitic herpes circinatus on the left arm (unsymmetrical), the hairs of the part being infiltrated with sporules of the trichophyton; and subsequently the *mother* of the family herself has been affected like the grandmother, they all living together. *En passant*, I may mention the instance of a white cat, a great pet with the children of a family of nine, which evidently contracted the "*mange*" and tinea tarsi from T. tonsurans, which attacked five of the children. (The fungus of "mange" is the tricophyton.)

Plica polonica.—Of this I have no experience. The observations

of Dr. Bidder make it the same as the ordinary ringworm of this country, which is confirmed by the occurrence of the achorion in it, as lately stated by M. Raciborski. I have stated that I have seen large oval spores (achorion) in T. tonsurans. I have been as brief as possible in my remarks, perhaps not explicit. I hope to have shown, if not the certainty, at least the probability, that parasitic diseases are mutually convertible; that differences of seat, soil, moisture, heat, and the like, account for the differences in observed appearances; that there is nothing in the microscopic history of the diseases which establishes any essential divisions between the different varieties; that their clinical history confirms this view; that T. favosa probably can be produced from T. tonsurans, the latter from herpes circinatus, and *vice versâ*, (case of mother and grandmother quoted;) that herpes circinatus may give rise to sycosis. (Mr. Hutchinson has shown that chloasma may be produced from T. tonsurans;) that chloasma may be also produced from the implantation of the oïdium; again, that sycosis may be produced from T. tonsurans; again, T. favosa and sycosis from the yeast-plant, (Lowe;) and last, I believe I have succeeded in saccharine solutions in producing the oïdium from the torula. The fact of finding the *sarcinæ* and *torula* in the instance before mentioned must not be forgotten in appreciating the question of the identity of parasitic disease. The nail fungus, according to Virchow, is an aspergillus; and, according to Kückenmeister, an aspergillus or oïdium. Meissner makes it achorion. The ear fungus is said by Robin to be aspergillus: a mucor by Slayter. These statements indicate some close relation between the different fungi.

Such are the facts I have at command at present. Do they justify the inference I have drawn? The demand for fuller explanation cannot be satisfied in this paper. Nothing but facts have been dealt with, and the material, if meagre, is none the less suggestive for future inquiry.

To conclude—

1. *Tinea* (the generic term for parasitic affections of the surface), which is disease of the hair, and not an eruptive one, must be regarded as essentially and primarily caused by the growth of a fungus, since the characteristic effects (upon the hairs) are never produced without such growth.

2. There exists but one parasite common alike to several so-called distinct kinds of tinea.

3. The variations are mostly in the *external* character of the tineæ —in the superadded rather than in the essential conditions of the disease; for the parasitic growth varies but little, and that only in *degree*, not in *kind*.

4. The superadded concomitant states (especially eruption, seat, and the like), by their variation, fully account for the observed differences in physical and minute appearances.

5. A certain soil is requisite for the growth of the tinea vegetation; and that furnished by the non-specific eruptive diathesis is the *necessary one.*

6. The treatment consists of general measures to correct the soil, and of local measures to destroy the parasite.

It is not improbable that future experience will show that parasitic growths of the mucous membrane are derived from the same source as those of the surface, the difference of habitat, &c., fully accounting for the varied results. They are in this latter situation correctly, practically regarded, *per se*, as of little moment beyond the indication that the type of the accompanying ailment is adynamic, and that the condition of soil is the disease demanding attention, (there is not present any structure like the hair of the scalp upon which they may produce perceptible and serious result.)

It would be far from desirable to alter the nomenclature now in use if it were correct to do so, since the treatment varies according to the aspect the tinea bears, and it is as well to have some mark to indicate the same.

Any one of the ordinary skin diseases may become complicated by the growth of a parasite which attacks the hairs of the part, however small and few they be; and the affection is then a complicated one—a parasitic eczema or parasitic herpes, &c., &c., being set up. Hence the distinction of skin diseases into parasitic and non-parasitic is not altogether an unimportant one; for, in the former class, general treatment is resisted, or ineffectual, perhaps, on account of the presence of a local cause of irritation which requires direct treatment.—*Lancet, Sept.* 17, 1859, *p.* 283.

84.—*Glycerine Ointment for the Itch.*—M. Bourguignon, so well known in Paris by his successful researches on "the acarus scabiei," has published in the Gazette Médicale the following formula. One general friction, not preceded by soap ablutions, is sufficient:—Yelks of two eggs; essence of lavender, lemon, and mint, of each seventy-five drops; essence of cloves and cinnamon, of each 120 drops; gum tragacanth, half a drachm; well pounded sulphur, twenty-six drachms; glycerine, thirty-two drachms. Total weight, nearly eleven ounces. Mix the essences with the yelks of egg, add the gum tragacanth, make a good mucilage, and then add very gradually the glycerine and sulphur.

Many cures have been obtained by this preparation, which has the advantage of giving no pain.

The well-known Helmerich ointment being really useful, M. Bourguignon has modified it, and substituted glycerine for the axunge. In the altered form the preparation is not any dearer, as efficacious, and

less painful than the original ointment. It does not grease the clothes, and has an agreeable perfume. Gum tragacanth, fifteen grains; carbonate of potash, thirteen drachms; well pounded sulphur, twenty-six drachms; glycerine, fifty-two drachms: essence of lavender, lemon, mint, cloves, and cinnamon, of each fifteen drops. Total weight, nearly eleven ounces. Make a mucilage with the gum and one ounce of glycerine, add the carbonate, mix until it is dissolved, and then gradually add the sulphur and glycerine; lastly, pour in the essences. With this compound. M. Bourguignon advises two general frictions of half an hour, within twelve hours of each other, and followed, twenty-four hours afterwards, by a simple warm bath, as the glycerine is soluble in water. Two-thirds of the preparation should be used for the first friction, and the other third for the second.—*Lancet, Aug.* 27, 1859, *p.* 218.

85.–*Pommade de Jaser for Scabies.*—According to M. DELAHARPE, physician to the hospital at Lausanne, of all the pomades proposed for the treatment of itch, one of the most efficacious is that of Jaser. Mons. D. has employed it for a number of years, with constant success.

The following is the formula for its preparation:

Sulphur Lotum,	16 grammes.
Zinci sulphas,	6 „
Veratrum album, (pulv.,)	4 „
Sapo niger,	32 „
Axungia porci,	64 „
Tinct. ol. Carui	1 gramme.

It will require about 250 grammes (about 8 ounces) of this pomade to effect a cure. A slight attack disappears after a single friction, preceded by a soap bath. When, however, the eruption is general, there should be two, three, or four applications made morning and evening.

In this preparation, the lard and the potassa-soap modify each other, although, by increasing the proportion of the soap, a risk would be incurred of making the pomade too irritating. The sulphate does not act here as a corrosive agent, as one might suppose, since it is entirely decomposed by the soap, resulting in the formation of a small quantity of sulphate of potash and sulphide of zinc. The powdered hellebore is necessarily the most active anti-psoric element, along with the tincture of caraway. Delaharpe believes that the proportions given above of the different constituents are the best adapted for the manufacture of the pomade.—*Journ. d'Anvers.*—*American Med. Monthly, June* 1859, *p.* 459.

DISEASES OF THE EYE AND EAR.

86.—OBSTRUCTIONS OF THE LACHRYMAL PASSAGES: A NEW MODE OF TREATMENT BY DILATATION.

By Edward Charles Hulme, Esq., Assistant Surgeon to the Central London Ophthalmic Hospital, and Surgeon to the Blenheim Free Dispensary.

[At the large ophthalmic hospitals, cases depending on obstruction to the lachrymal passages, are very numerous: they present themselves in various stages of development. Simple mucocele is often treated by tonics, with counter-irritation over the sac.]

Mr. Bowman's plan of probing the passages, after slitting up the canaliculus from the punctum to the caruncle, is the most scientific and rational mode of treating the strictured part; but even this necessitates continual daily attendance and much expenditure of time on the part of the patient; and however practicable and advantageous in private practice, the poor find difficulty in giving such regular attendance as is necessary to ensure success.

I believe it is generally admitted, and it is in accordance with the results of my own observations, that the greater majority of these lachrymal obstructions have their origin in chronic inflammation of the lining membrane of the nasal passages, which extends upwards into the nasal duct, and so continuously into the sac; a thickening of the mucous lining takes place, a thick, glairy secretion is poured out, which unable to escape of itself through the nasal duct below, or through the apertures of the canaliculi towards the eye. accumulates, fills, and distends the lachrymal sac, and by this distension the entrances of the canaliculi become altered in position, pressed upon by the contents, and become thickened and obstructed. This mucous secretion gradually becomes muco-purulent; it generally retains this character; and the sac can with more or less difficulty be emptied by pressure, the contents escaping either over the globe through the canaliculi, or into the nostril by the nasal duct. Independently of this common cause of obstruction, the canaliculi themselves, as shown by Mr. Bowman, may be primarily obstructed; and I have satisfied myself by numerous dissections that the canaliculi have not always that regular entrance into the sac that they are described as possessing. I believe, therefore, that in the treatment of these cases the first point of importance to attain is the free and continued patency of the canaliculus in its whole length, and also at its entrance into the sac, and then to commence the treatment of the obstruction of the nasal duct, both of which points are fulfilled by the method I proceed to describe. Having provided myself with a set of wires, made of "virgin silver" (which, by its flexible nature, is very easily bent), of various diameters, from that of a hair probe to that of one-fifteenth

of an inch, I slit up the canaliculus on a fine director, throughout its whole length, past the caruncle, on up to the sac. If the entry of the canaliculi is patent to the passage of a probe, I prefer not to carry the incision into the sac, as I think this should be avoided, if possible; but should no probe be able by the most careful manipulation to be introduced, then the incision must be carried on, and it is preferable to open the sac, when it is distended with its contents, the escape of which proves the entry of the knife into the sac. I then with a medium size wire, try and find the entry into the nasal duct. If successful in passing it directly through the nasal duct, I bend the wire over the edge of the lid, and cut it off with a pair of nippers, leaving a bend of about $\frac{1}{4}$ of an inch hanging externally over the lid. This end may be kept in its place by a piece of plaster, and it will be found to ride quite easily close in at the angle of the lids to the inner side of the caruncle, where there is hardly any motion of the lids, from the action of the orbicularis muscle. Should I not be successful in passing the medium size wire, I attempt the same plan with a finer one, which I bend in the same manner. Whichever sized wire be introduced, it should be worn for three or four days, at the end of which time I re-introduce a larger one, and continuing this gradual introduction of wires of a larger diameter, it is found that in two or three weeks the duct will take as full a sized wire as is necessary, *i.e.*, one of from one-twentieth up to one-fifteenth of an inch. Should I fail in passing any wire at all into the nasal duct, which is often so firmly blocked up as to render the passage of any probe impossible, I get through the obstruction with a knife I have for the purpose, or it may be more correctly described as a fine trocar of a one-fifteenth of an inch in diameter, without a canula, and having a slight bend in it to accommodate it to the projection of the brow, and for this more or less force is required, according to the nature of the obstruction. Having withdrawn it, a full sized wire is passed, which is also bent and cut off in the manner above described.

I have been led to adopt this mode of treatment in my attempts to try the "bent styles" described by Mr. Bowman in the Ophthalmic Hospital Reports, No. I., p. 19. The difficulty experienced in keeping the horizontal, thin portion of those styles in the tube of the canaliculus, the irritation their finer ends produced on the globe of the eye when not accurately adjusted, and the ulceration produced in that part of the canaliculus which was not slit up, *i.e.*, between the caruncle and the entrance into the sac, induced me to extend the incision and to give the style a bend outwards. I speak from the experience of fifteen cases, in no one of which has any irritation been produced sufficient to induce me to withdraw the wire, or has even any patient complained of them; after slight inconvenience on the first day, it seems to be well tolerated. In one patient, in whom from the dense nature of the obstruction, I was obliged to use force, the relief from wearing this wire has been such, that after six months' continued use

of it, she will not give it up; and, I might here add, that this patient had worn an old-fashioned style inserted through the skin, without benefit, inasmuch as the stricture was at the entrance of the canaliculi into the sac, as well as there being a dense obstruction in the duct. I think I may say that by this plan a speedy dilatation of the obstruction is attained; that the attendance of the patient is not required so frequently as when undergoing dilatation by probing; that the entrance into the sac is kept patent as well as the nasal duct; that the advantages of it over the old style inserted through the skin are very evident, and that its principle of restoring the course of the tears through their natural channel is correct. I am aware that there is one objection, but which, I think, may apply to all attempts at attaining a permanent cure of any obstruction in the mucous canals of the body, viz. the tendency to relapse. To obviate this, in a few of my more intelligent patients, I am instructing them to introduce these wires themselves after a full dilatation is obtained; and so by occasionally wearing them to keep up the patency of the passages. Anyhow, it must be granted, that if relapse should occur, the patient remains in a favourable condition for a re-introduction of the wires, or for the practice of probing.—*Med. Times and Gazette, May* 21, 1859, *p.* 522.

87.—DISEASE OF THE LACHRYMAL DUCT.

(Under the care of H. Walton, Esq., Central London Ophthalmic Hospital.)

Any swelling of the mucous membrane of the lachrymal duct is, in consequence of the unyielding bony canal around, sure to be attended with more or less interruption to the escape of the tears into the nose and to the natural mucous secretion, and to produce the well-known symptoms of obstructed duct. If we except chronic inflammation of the conjunctiva, commonly known as granular eyelid, it would be difficult to name an affection more troublesome to treat than the above. Every few years some new suggestion or plan is brought out, and invariably it is supposed for a time to be the thing needed, each in turn giving place to the other.

But we will proceed with the characteristics of Mr. Walton's treatment. He employs constitutional measures, we may say almost always, because he says in nearly every instance is there unmistakeable evidence of general indisposition and want of general power. He calls to his aid also mechanical means in the great majority of the cases that come to him, because they are in an advanced state, and need it. Rarely does a hospital patient seek relief till the disease is of long duration, and the same may be said of private patients, who seldom go to the ophthalmic surgeon in the first instance.

When a patient applies with acute inflammation of the duct, manifested in swelling and redness of the parts at the corner of the eye, and more or less œdema of the eyelids, Mr. Walton does not attend to the external symptoms merely, but at once directs his attention to the cause of them, and makes an incision into the upper part of the duct, and pushes the narrow knife through any resistance that may exist; and if there be marked obstruction, he passes a probe of sufficient size, and allows it to remain for an hour or two. This is more in accordance with the principles and practice of modern surgery, whereby the products of inflammation are allowed to escape, than merely to leech, and to apply topical applications, but it has the greater advantage in being the more potent plan, as Mr. Walton finds that with general treatment of a tonic nature a cure often ensues.

The last case we saw treated at the hospital was of this nature. A young man had for several weeks been troubled with irritation and unhealthiness of the duct, when an acute attack supervened. There was so much swelling that the inner edge of the orbit could not be felt, and withal, excessive tenderness. The use of the knife gave exit to pus, and vitiated mucous secretion. As there seemed to be little if any obstruction to the passage of the instrument, the probe was used. This is the most favourable kind of case, and there is abundant evidence of the disease being often arrested here. Not so, however, when it gets a stage further, when frequent acute attacks have produced structural changes, or thickening of the duct has been the result of long-continued subacute morbid action. According to Mr. Walton's observation, a tolerably correct idea of the obstruction of the duct may be gathered from the condition of the periosteum and the tissues immediately around, in the vicinity of the head of the duct. So long as there is no thickening, and the outline of the bones can be distinctly made out, there is no need for mechanical treatment; the unhealthiness of the mucous membrane is amenable to general measures, with local leeching and blistering, but in proportion as there is thickening of the parts and induration, so is there a corresponding change throughout the duct, and the treatment by dilatation becomes necessary, and a cure is the less certain.—*Med. Circular, Sept.* 7, 1859, *p.* 117.

88.—CORNEAL FISTULA CURED BY CAUTERIZATION WITH COUNTER PUNCTURE.

(Case under the care of Mr. Dixon, Moorfields Ophthalmic Hospital.)

An elderly woman, who had been operated on for cataract (by extraction) two years before, was admitted a few weeks ago under Mr. Dixon's care at the Ophthalmic Hospital, with the complaint that her eye was failing her. Only one eye (the left) had originally

been operated on, and she had obtained very good sight from it. It was only within a few weeks that her power of vision had been failing. On carefully looking at the eye Mr. Dixon discovered that near the middle of the cicatrix, which was rather broad, was a minute fistula, through which the aqueous humour slowly drained away, The anterior chamber remained nearly as full as usual, and the plane of the iris was vertical, the process of resecretion supplying the loss by the fistula. The latter might, indeed, have been easily overlooked. It was only by absorbing the moisture adjacent to it by blotting-paper, and protecting it from the tears from above, that the welling up of aqueous humour through it could be positively demonstrated. Mr. Dixon remarked that he had no doubt that this fistula had opened only recently. If it had remained from the time of the operation, the patient would not have had such good sight as she had enjoyed until quite latterly. His experience of corneal fistulæ was, that however completely the resecretion of fluid might keep pace with the loss, yet sight was always rendered very imperfect. Probably, in this instance, the cicatrix had from the first been thin and stretched, and now, from some accidental cause, it had given way at its thinnest spot. To cure the fistula was plainly the object of treatment, and its almost invisible minuteness rendered this no easy matter. Mr. Dixon at first tried touching it with a fine probe coated with nitrate of silver. This was done twice; and on the second occasion for a few days it was thought to have been successful; but ultimately, the little channel again opened itself. On the third occasion, Mr. Dixon made a counter puncture at the lower part of the cornea, and let out the aqueous fluid, having just before again applied the caustic to the orifice. The eye was kept quiet by strips of plaster. It was hoped that during the time the cornea was flaccid, from the removal of the contents of the anterior chamber, union might ensue. The result justified this expectation; and when we last saw the patient, the fistula appeared soundly healed, and the woman's sight was improving.—*Med. Times and Gazette, August* 27, 1859, *p.* 213.

89.—CASES OF PTOSIS AT THE ROYAL LONDON OPHTHALMIC HOSPITAL.

One congenital case was cured (the pupil uncovered) by removing an oval piece of skin from the upper lid, and bringing together the wound with sutures.

Another case, caused by accumulation of fat behind the orbicularis, was cured by removing most of the fat and a small oval slip of skin.

A third case, J. T., aged 42 (patient of Mr. Bowman), had four times been operated on for ptosis, by removal of portions of skin; both upper lids hang straight down from the orbital edge and cover

the upper third of either pupil; the palpebral apertures appear small, and the outer lateral palpebral ligaments are much lengthened.

29th of March, 1859. With a needle the two ends of a thread, were at a distance of about four lines from each other, thrust through the outer angle of the upper fibro-cartilage, near the outer lateral ligament, carried out through the skin, and brought together over a small piece of sticking plaster. The upper lids were thus stretched and dragged out and upwards, and the whole of the pupil became visible.

12th of April. The lids cover again the pupils, though the threads had several times been shortened. Mr. Bowman, then, by a new operation, displaced the lower edge of the orbicularis of both upper lids. A narrow oval slip of skin was first removed, so as to expose the lower margin of the orbicularis; the thin skin was with a cataract knife separated from the anterior surface of the lower third of the orbicularis. A very fine silk thread was introduced through the skin beneath and close to the orbital edge, above the outer and inner angles of the oval skin incision; and between the skin and the orbicularis, carried to the lower margin of the latter; there it was stitched through the margin, so as to enclose some of the muscular fibres, and was then brought between the fibro-cartilage and the posterior surface of the orbicularis and carried back through the skin at a spot which was about four lines distant from the point of introduction. Each orbicularis was thus suspended in two loops of silk; both ends of the silk were then tied over a small roll of plaster, to an extent sufficient to raise the lid and the orbicularis behind the detached skin; the orbicularis would thus, it is supposed, undergo adhesion, and stand higher in reference to the margin of the lid, than it did originally.

A good deal of swelling and catarrhal ophthalmia followed the operation, but subsided after a week, when the threads were removed.

19th of April. Both pupils are uncovered, the skin of both upper lids is thrown into folds.—*Ophthalmic Hospital Reports, July* 1859, *p.* 111.

90.—*Cases of Nævus of the Eyelid, at the Moorfields Ophthalmic Hospital.*—Three nevi, two in the skin of the right upper, the other in that of the left lower, lid, were treated by drawing floss silk, steeped in perchloride of iron, through them. The following inflammation was slight; the threads were removed the third day. One of the nevi was cured within a month, one in three weeks, and a small remaining portion of the third was removed by ligature.

A hazel-nut-sized nevus in the thickness of the right lower lid (first observed as a small red point seven days after birth) in a child, five months old, was treated by dividing subcutaneously the tissue of the nevus, and then injecting a few drops of pure tannic acid, which rendered the nevus hard; a few drops of blood escaped, and a bandage

was applied; no bleeding ensued. The next day, the child had diarrhœa and fever; the former stopped the following day, the latter increased, and the child died on the fourth day with convulsions. The parents refused a post-mortem examination.—*Ibid, p.* 113.

91.—CANCEROUS ULCERATION CLOSE TO THE INNER CANTHUS, TREATED WITH SULPHATE OF ZINC PASTE.

By Dr. WILLIAM MACKENZIE, Glasgow.

[The cancerous ulcer in this case was situated on the side of the nose, close to the inner angle of the left eye. It was fully the size of a four-penny-piece, of irregular shape, covered with a scab, and surrounded by hard and elevated edges. The disease seemed to be extending in the direction of the caruncule lacrymales.]

I felt no doubt that were the ulcer left to itself, it would gradually spread, and prove rebellious to all applications of a soothing description. Having repeatedly found, also, that extirpation of such a disease by the knife, even when care was taken to cut into the sound integuments, although followed by a firm cicatrice and an apparent cure, was succeeded after a time by a renewal of the scirrhous hardness and intractable ulceration, I determined in this case to try as an escharotic the sulphate of zinc, as recommended by Dr. Simpson of Edinburgh. I was partly led to this course, too, by observing that I could not extirpate the diseased part without removing the lower papilla lacrymalis.

Having driven off by heat the water of crystallization of a few grains of the sulphate of zinc, and reduced the residuum to a fine powder, I mixed it with a little glycerine, so as to form a thick tenacious paste. Taking a little of this on the point of a bit of stick, I applied it over the scab and over the hard edges of the ulcer, and covered the part with dry lint.

Next day, I found that the application had given very little uneasiness; but that it had acted in destroying almost entirely the hard edges of the sore, and left the whole of its surface free from scab and of a florid healthy colour.

Two or three times subsequently, I covered the edges again with the zinc paste; after which I left the wound to cicatrize, under the application of dry lint. I touched the conjunctiva and papillæ lacrymales occasionally with the four grains' solution of nitrate of silver, under which application they speedily freed themselves of inflammation.

On the 24th March, the patient called on me, with a firm cicatrice, of a healthy hue, in the site of his former disease.—*Opthalmic Hosp. Reports, April* 1859, *p.* 5.

92.—*Strabismus.*—[The plan of applying a suture to the incision in the conjunctiva is a good one, but is generally neglected by most operators.]

Mr. Walton makes a very small opening in the conjunctiva within about a line of the margin of the cornea; he then introduces the hook, sweeping it partly round the globe of the eye, and, having caught the muscle, draws it to the opening, and divides it at the side of the hook next the cornea; then with a small curved needle he passes a fine silk thread through the edges of the incision, and brings them together, tying the ligature in an ordinary knot.

It is surprising how soon the wound heals when treated in this way, and it is not liable to have those troublesome granulations spring up in the corner of the eye which so often retard the cure, when the wound in the conjunctiva is left gaping, and when made nearer to the inner canthus.—*Med. Circular, Sept.* 7, 1859, *p.* 117.

93.—ON THE STRUCTURE AND MOVEMENTS OF THE IRIS.

By Dr. LETHEBY.

[The following results are from investigations pursued some years since, for the purpose of ascertaining whether the movements of the iris are due to muscular contraction or to vascular turgescence.]

1st. A microscopic examination of the iris failed to discover the presence of muscular fibre, except at the outer or ciliary boundary; for the orbicular and radiating fibres had none of the appearances of muscular tissue. That which composed the circular margin of the pupil had the properties and structure of ligamentous tissue; and the rest of the iris was chiefly composed of capillary vessels.

2nd. When the iris was subjected to the stimulus of galvanism, which is so powerful an agent in exciting muscular contraction, there was no movement of it after circulation had ceased. This is very unlike the behaviour of muscular tissue; for in all other cases the circulation of blood is not essential to muscular contraction; in fact, the removal of muscular fibre from the body, and therefore the cutting off of all vascular connection, has no influence on its contractility when it is subjected to such a stimulus. But if the eye of an animal is removed from the orbit and galvanised, the iris shows no sign of contraction, whilst the recti muscles are strongly affected. So again, a few minutes after death the iris ceases to contract, for generally this is sufficient time for the arrest of the circulation in the eye, and then no movement can be produced in it.

3rd. Again, if the iris be made up of two sets of muscular fibres—the radiating and circular, intimately blended together, how is it that in the living animal, one set only, namely the circular, contracts un-

der the influence of a stimulus? or conversely, why is it that belladonna, and the active principles of the solaneæ generally, act only on the same set? It may be answered that the circular only are muscular. and the radiating elastic; but of this we require proof.

4th. And why, too, is it that in every condition of the system, when the vessels of the head are gorged, as in apoplexy, the pupil is contracted, and in opposite states, as during syncope and in epilepsy, the pupil is dilated? This points to the fact that vascular turgescence has something to do with the phenomena.

5th. The chemical reactions of the iris are more like those of elastic tissue than muscular fibre; for if the iris is enclosed between two pieces of glass, together with fragments of muscular and ligamentous tissue, and then boiled in water, the former like the latter is so changed that the structure is obliterated and gelatine is produced from it; but nothing of the kind occurs with muscular fibre.

6th. If the contraction of the pupil is due to circular fibres, it is manifest that when there is a radial slit in the iris, the contraction of it should cause the sides of the slit to be drawn asunder, but experiments on animals show no such a result: on the contrary, when the iris is cut through the pupil contracts as usual, and the edges of the slit are brought closer together.

7th. If we turn to comparative anatomy for help in the inquiry, it will be found that the pupillary aperture in the eyes of some animals is reduced in size, not by a circular contraction of the pupil, but by the falling down or pushing up of a curtain. This is well seen in the eye of the skate, and it is proof that the movement is not due to muscular contraction, but to the unfolding of the curtain-like membrane by some other cause. Again, the irides of most fish, and of many reptiles, are immoveable, although they have the same structure as those of mammals, excepting the vascularity. So also in tracing the development of the iris from the lowest class of animals to the highest, it is found to be nothing more than a prolongation of the vascular choroid.

Lastly. Injections of the iris show it to be very vascular, and to be made up almost entirely of an erectile plexus. Nay more, if we inject the eye with water from the carotid, we can effect a contraction of the pupil with every force of the syringe; and this may be done long after death, when muscular irritability has entirely ceased.

My conclusions, therefore, are that the movements of the iris in mammals are due to vascular turgescence, and not to muscular contraction, indeed I might point to the fact that the existence of muscular fibre in the outer or ciliary margin of the iris, may afford an explanation of the phenomena, for if there were muscular pressure on the returning capillaries of the iris the tissue would become gorged with blood and the pupil contracted; but of this I had not sufficient proof because of the difficulties of the inquiry.—*Ophthalmic Hosp. Reports, April*, 1859, *p.* 17.

94.—ON SYPHILITIC INFLAMMATIONS OF THE EYE.

By JONATHAN HUTCHINSON, Esq.

[Having detailed no less than 64 interesting cases of inflammations of the eye of a specific nature, the author proceeds to analyse them. He divides the task into three parts: firstly, the natural history of the disease hitherto known as strumous corneitis; secondly, he endeavours to show that it is a direct consequence of hereditary syphilis, and occurs almost solely in the children of parents one or both of whom have suffered from venereal disease; lastly, the treatment, which should be more directed against the specific nature of the disease, than is usually the case.]

1. *Age.*—It would appear that the greatest proportion of cases of this form of keratitis occurs in patients between the ages of 10 and 15. Thus we find that in nine instances the disease began before the age of 5, in eighteen between 5 and 10, in twenty-five between 10 and 15, in nine between 15 and 20, and in the remaining two between 20 and 25; the average age for the whole sixty-four being 10. It would appear to be comparatively rare in early childhood, and still more so subsequently to the full establishment of puberty. I have never seen it commence in any one beyond the age of 25. With regard to several cases in the series in which it is stated to have begun in infancy, I feel some doubt as to the correctness of the history, as I did not see the patients until some years after the commencement of the disease. No doubt the eyes were inflamed at the date assigned by the mothers of the patients, but whether the affection was from the first interstitial keratitis is open to some question. I have never myself witnessed its occurrence earlier than the age of two years.

2. *Sex.*—It would appear that girls are more liable to this disease than boys. Thus in forty-one of the cases before us the patients were females, and in twenty-three males, a ratio of one of the latter to 1·8 of the former. This coincides with what I have ascertained respecting the acute iritis of syphilitic infants. Of the latter disease I am in possession of the particulars of sixteen cases in which the sex is specified, and of them twelve were female infants, and only four males.

3. *State of health at the time of outbreak.*—In none of the preceding cases is it stated that the outbreak of keratitis had occurred during recovery from small-pox or any other exanthem, nor is there any note of other causes of ill health supposed to have acted as predisponents. In none of the cases was there any reason to suppose the patient to be the subject of phthisis or other tuberculous affection, and amongst the coincidents "conspicuous by their absence" supposing the affection to be "strumous," is enlargement of the lymphatic glands. In only two cases did any affection of the cervical glands exist. On the other hand, the series presents very few exceptions indeed to the following

statements: *a. That the patients were of peculiar pallor.* In most the complexion was of a pale leaden or sallow hue, without a vestige of colour, and in none of the exceptional cases was there any degree of the excessive floridness so commonly seen in the subjects of glandular struma. *b. That the skin generally, and that of the face especially, was thick, coarse, and flabby.* This condition is intended to be comprised whenever the term "syphilitic physiognomy" is used. I have never employed the latter expression except to denote a striking and remarkable condition, such as would, from its peculiarity, have arrested the attention of the most cursory observer. *c. That the bridge of the nose was wide and depressed.* This state also is included wherever the above terms have been used. *d. That in the skin of the face there were numerous small pits and scars, and about the angles of the mouth the radiating scars of former ulcerations.* The common non-specific eruptions of childhood, impetigo, porrigo, and eczema, leave no perceptible scars whilst their syphilitic congeners almost invariably do so. Small-pox, chicken-pox, and herpes, undoubtedly do cause pits and scars which are undistinguishable from those of the syphilides. The conjunction of fissures at the oral angles with pits in the face, a history of no one of these three affections being obtainable, is, however, very suspicious. *e. That, in those who had cut their permanent set, the condition of the incisor teeth was very peculiar, both in form, colour, and size.* As diagnostic of hereditary syphilis, various peculiarities are often presented by the others, especially the canines, but *the upper central incisors are the test teeth.* When first cut these teeth are usually short, narrow from side to side at their edges, and very thin. After awhile a crescentic portion from their edge breaks away, leaving a broad, shallow, vertical notch, which is permanent for some years, but between twenty and thirty usually becomes obliterated by the premature wearing down of the tooth. The two teeth often converge, and sometimes they stand widely apart. In certain instances in which the notching is either wholly absent or but slightly marked, there is still a peculiar colour, and a narrow squareness of form, which are easily recognised by the practised eye. In a considerable number of the cases cited no mention is made of the teeth, the notes having been taken before I was aware of the value of their structure as a symptom. Since I have made it a rule always to look into the mouth, however, I have not met with a single example of well characterized interstitial keratitis in which the teeth were of normal size and shape. Indeed there can be no doubt whatever as to the truth of the assertion that malformed upper incisors (permanent set) are all but invariably coincident with this disease. A few months' observation at any large Ophthalmic Institution will satisfy any one of this clinical fact.

The following special affections were coincident with the keratitic disease. Large scars in the soft palate and pharynx in six instances. Deafness consequent on otorrhœa in eight. Nodes in six (tibia four,

radius two). Psoriasis on the face in four. Destruction of the nose by erosive lupus in three. Pains in the bones in three. Suppurated glands in the neck in two. Laryngeal disease in two. Tinea tarsi in two. Swelling of knee joints in two. Inverted eyelids in one. Lacrymal abscess in one. Cellular abscess in one. Exfoliation of alveolus of upper jaw in two.

4. *Previous history, more especially as regards infancy.*—In thirty-one of the cases, or rather more than half, a clear history of the occurrence of symptoms of inherited syphilis in infancy (rash, sore mouth, ulcers at anus, prolonged snuffles, &c.) was obtained. This number would probably have been much increased, but that in many cases I was unable to see the patient's mother, or any one who could answer questions on this head. In several, which I have not included in it, there was a history of one or more very suspicious symptoms; the group, however, was not sufficiently complete to allow of a confident opinion. In eleven instances the mothers admitted that others of their children had also in infancy suffered from similar symptoms. Many of the cases in which I was unable to obtain a history or to make inquiry as to infantile symptoms, are those in which physiognomy, teeth, &c., were most typically characteristic. The proportionate frequency of otorrhœa, ulceration of the palate, &c., has already been stated.

5. *History of syphilis in parents.*—Those who have engaged in similar inquiries will feel no surprise at the fact that in nineteen cases only did I obtain from the parents a free admission that one or both had prior to the birth of the child suffered from venereal disease in a constitutional form. Of these, in twelve instances, the mother had been infected by her husband, and both were consequently diseased; in four the father was known to have had the disease whilst the mother averred that she had never suffered; in one the mother had had syphilis before marriage, and believed her husband to be healthy; and in the remaining one there was a statement (probably untrue) about the communication of the disease direct to the infant by a tainted nurse. In thirty cases, or nearly half, I either had no opportunity of asking questions on this score of either parent, or did not avail myself of it. In five instances syphilitic symptoms existed at the time that the notes were taken in one or other parent, and this number includes some in which, notwithstanding, all history of primary disease was denied. In two cases, in which I could obtain no confession, the mother admitted that other medical men who had attended her children in infancy had asked the same questions as myself.

6. *Estimate of viability of the patient's family.*—Very important information may be reflected upon many of the questions connected with inherited tendencies to particular forms of disease by data as to the mortality which has prevailed amongst the brothers and sisters of the subjects of them. If the rate of juvenile mortality has been

excessive there is ground for believing that the taint is of a kind which materially diminishes the vital power and predisposes to the attacks of fatal diseases.

Fifty-three mothers of subjects of interstitial keratitis (the latter being at the time of inquiry of the average age of nine and a-half) had borne families averaging seven in number, but which had been reduced by death to an average of 3·3. Fifty-three mothers had borne a total of 371 children, and of these only 179 remained alive. In other terms, fifty-three patients suffering from interstitial keratitis pass before us, and we find, on asking, that, taking one with another, they have all lost in early life more than half of their brothers and sisters. There can be little doubt, despite the many fallacies to which statistics expose us, that this rate of mortality is very high.

7. *Position of the patient amongst his brothers and sisters.*—We have seen that the 53 families give us a total of 179 living children, an average of 3·3 to each family. Now, supposing the 179 children put together and a group of 53 drafted from them without any selection, this group ought to contain of the eldest of their respective families, a proportion of only 1 in every 3·3. The subjoined tabular statement will show how different is the result in the cases before us, and will demonstrate that interstitial keratitis in choosing out its victims, has some principle which guides its selection.

Of the 53 cases the patient was,

The Eldest	in 38	instances, a proportion of	1 in 1·4
Second	in 8	„ „	1 in 6
Third	in 5	„ „	1 in 10
Fourth	in 1	„ „	1 in 53
Fifth	in 1	„ „	1 in 53

Thus it would appear, that not only does the disease select the eldest in the large majority of instances, but that it proceeds downwards by the same rule, preferring the second to the third, and so on. This statement of fact, strong as it is, would be yet further strengthened if two sources of fallacy could be removed: 1st, that in certain instances, the primary disease had probably been contracted by the parent after the birth of part of his family, and that thus the patient, although not the eldest of the whole, was the eldest of those born subsequent to the event alluded to.—2nd, that in two instances in the series, both the eldest and the second child suffered from keratitis, and are included in the table.

Why the first-born should suffer most often, and most severely, from a disease consequent upon syphilis in the parent, we can easily understand; it is in keeping with all that we know respecting the transmission of that disease. On the "strumous" hypothesis, however, to the exclusion of inherited syphilis, I think I may fairly challenge any one to offer a shadow of explanation of the remarkable facts just adduced.

8. *Phenomena of the attack.*—The phenomena of interstitial keratitis have been well described by several authors. I have given a brief *resumé* of them in vol. i. page 232, and need not here attempt any lengthy description. The series under consideration, however, supplies us with several cases, in which less usual, and hitherto but little noticed, conditions were presented. The cases in fact divide themselves into four groups, according as one or other of the special symptoms of inflammation were apparent.

Group A includes the more common cases, in which interstitial deposit, without any great degree of sclerotic or superficial vascularity, is the prominent symptom.

Group B comprises those cases in which, in addition to the interstitial deposits of lymph, crescentic fringes of capillaries are seen spreading from the circumference over the surface of the cornea. These fringes usually commence at the lowest part, but subsequently encroach from all parts of the cornea, and often nearly, or altogether, meet in the centre. In the latter event, I have seen produced a remarkably vivid colouring of the whole surface. The degree of lacrymation and of intolerance of light, present in any given case, will usually be found proportionate to the extent of these fringes.

Group C is illustrated by three or four cases only in the present series. In it there is a large effusion of lymph, in all probability from the posterior surface of the cornea, moulding itself in the concavity of the latter, and causing complete blindness. Hitherto I have never seen the superficial vascularity characteristic of group B, coexistent with this state of things. After this form of disease, I suspect that the eyes are always more or less damaged permanently.

Group D has for its characteristic the punctate effusion of lymph, in circumscribed dots on the posterior layer of the cornea. This condition is often seen in iritis, consequent on acquired syphilis; it also constitutes a most characteristic feature of what is known as aqua-capsulitis, as distinct from interstitial keratitis. In a few cases of the latter affection, however, it occurs as the first stage, to be followed sooner or later by more anterior effusions into the substance of the cornea itself.

Although I have mentioned these varieties as distinct groups, yet it must be understood that they not unfrequently stand in the relation of stages one to the other. The more severe conditions included in groups B and C are, for instance, rarely produced, without either those of A or D having preceded them.

The occurrence of iritis, as a complication in cases of interstitial keratitis, although not unfrequent, is, I believe, far from being usual. The obscuration of the cornea is commonly so quickly produced, that it becomes impossible to inspect the state of the iris, after the first week or two of the attack. During that period I have very rarely indeed been able to detect any evidence of the iris being affected. On recovery, the pupil is usually quite round and mobile, though not un-

frequently the iris structure itself has lost some of its lustre, and looks dull and leaden. I have very rarely indeed seen the pupil occluded. When iritis does occur, it is usually of very slight severity, and attended with but little tendency to effusion.

In most cases interstitial keratitis affects both eyes, and with almost equal intensity. Both were involved in fifty-six of the sixty-four cases under consideration; in five the left alone, and in three the right alone. Out of twenty-five, in which the notes inform us as to which was first attacked, we find the left to have been so in fifteen instances, and the right in ten. Of twenty-six, in which like information is given, as to which was most severely affected, it is the left in seventeen, and the right in nine. It would seem, therefore, that the left eye is the most often attacked alone, is most often the first to be affected, and usually suffers the most severely.

As in most other symmetrical diseases, it is rare that the two organs are attacked quite simultaneously. The second is, I believe, usually affected from a few days to a few weeks subsequently to the first. Now and then, however, the interval is much longer. Thus in Case 43, a period of two years intervened, and in Case 31, one of four months. Case 26 is interesting as an instance of acute relapse in one eye, two years after the beginning of the attack, and when both had seemed to be nearly recovered. Several other instances of relapses, more or less acute, are scattered through the series, but they are decidedly exceptional. Ordinarily, when once the process of clearing has set in, it is remakable how steadily it advances.

I will now place in concise juxtaposition the chief reasons which induce me to regard interstitial keratitis as a direct result of inherited syphilis.

1st. From its being a very well-marked and peculiar form of disease, it is *à priori* probable that it acknowledges some single and definite cause.

2nd. Its subjects are almost invariably of very peculiar physiognomy, and usually bear the most marked similarity to one another.

3rd. Its subjects almost invariably have their upper central incisor-teeth of the permanent set dwarfed and notched in a peculiar and characteristic manner.

4th. In most cases the features alluded to under the the last two heads bear no resemblance whatever to those of "struma" properly so called. The subjects of true struma, on the contrary, usually have large white teeth, and are often of florid complexions.

5th. I have not yet seen a single case in which the patient was the subject of phthisis, and very few in which enlargement of the glands of the neck had occurred.

6th. It affects by preference the eldest living child of the family, a circumstance to be expected under the syphilitic hypothesis, but wholly inexplicable under that of struma.

7th. It affects female children in preference to males, and

occurs in families in which a large infantile mortality has usually occurred.

8th. It occurs in all classes of the community, the well-fed and under-fed, and the residents in the most healthy situations (sea-side, &c.) as well as those of crowded cities.

9th. In nineteen out of thirty-one cases in which I was able to make inquiries on the subject, I obtained a confession that one or other parent had suffered from constitutional syphilis prior to the birth of the patient.

10th. In the thirty-two instances out of thirty-eight in which I obtained information as to the health of the patient during early childhood, a clear history of the usual symptoms of infantile syphilis was given.

11th. In eleven instances there was a clear history of symptoms of infantile syphilis having been observed in brothers or sisters of the patient.

12th. Whilst, as above observed, enlargements of the lymphatic glands (two cases) are unusual, other affections far more closely connected with syphilis than with true struma, such as nodes (six cases), ulceration of the palate (six cases), and erosive lupus (three cases), are not infrequent in the subjects of this disease.

9. *Treatment.*—The treatment which I usually adopt consists of the cautious use of mercurials and iodides, at the same time supporting the system by tonics and a liberal diet. The mild mercurial ointment rubbed in behind the ears, in the neck, or under the axillæ, every night at bedtime, is the best mode of employing that agent, and one which in these cases I never omit. A mixture containing iodide of potassium, iodide of iron, and tincture of nux vomica is also usually prescribed at the same time. If the patient be very feeble and if the case be one belonging to group B, that is, with much superficial vascularity, more direct tonics, such as quinine and the pyrophosphite of iron, are indicated. The induction of ptyalism ought certainly to avoided. Although in one instance I witnessed most rapid improvement coincident with its occurrence (Case 12), yet I feel sure that is unwise to run the risk of so much reducing the patient's strength. Unless, indeed, the surgeon is certain that his patient is well fed and well protected from cold, the utmost caution ought to be used in ordering mercury. In case 48 a rapidly induced ptyalism in a half-starved feeble girl certainly did harm. If the intolerance of light be great the occasional employment of blisters behind the ears may do good, but some of the worst cases I have seen had become so in spite of setons which had been introduced into the temples. To cases 14. 31, and 49, I would appeal in proof of the superior efficiency of a combined tonic and specific plan of treatment over a merely tonic one. I had at first intended to attempt a detailed comparison of the two modes, but on further examination of my data am reluctantly induced to content myself for the present with the above observation. —*Ophthalmic Hospital Reports, July* 1859, *p.* 94.

95.—ON EXTRACTION BY LINEAR INCISION.

By Benjamin Bell, Esq., and Dr. Patrick Heron Watson.

[The word Linear is used here in contradistinction to the flap. or ordinary operation of extraction, which involves nearly one half of the cornea. The operation might be called extraction through a small section.]

The chief advantages of the operation seem to be these two :— 1. It affords an easy and expeditious mode of getting rid of soft cataracts. to which alone it is applicable, for it is well known, that when these are treated in the ordinary way, by being broken up with a view to solution, they are often dissolved very slowly and not without ultimate injury to the visual powers of the eye. Ophthalmic surgeons are familiar with the observation, that the process of solution is not unfrequently followed by a marked impairment of vision, as if the deeper and more important textures had, somehow or other, been interfered with in their nutrition, by the prolonged and exhausting effort to dissolve and remove the opaque lens. But by removing the cataract at once, as in the operation by *linear incision*, the organ is spared this effort at solution, and the likelihood of vision being restored is greatly increased. And even, if a portion merely of the cataract escapes through the opening in the cornea, the remainder dissolves and disappears more rapidly and with less injury to the eye, than if the whole lens had been allowed to remain in the chambers of the aqueous humour, after being broken up by the needle. 2. The smallness of the incision of the cornea—which, however, the cataracts being soft, is amply sufficient—renders the operation both less dangerous and more easily performed, than the ordinary method of extraction for cataracts of hard and firm textures. Such cataracts always require an ample section of the cornea, and, under ordinary circumstances, and in suitable cases, no other operative procedure, notwithstanding the difficulty of its performance, can bear a comparison with it.

The operation by linear incision may be performed in the following manner. But, first of all, is chloroform to be administered? There seems to be less objection to its use in this operation, than in ordinary extraction with a large division of the cornea; because, in the event of sickness and vomiting being induced, the risk of injury to the eye is obviously smaller. Moreover, unless the self-possession and steadiness of the patient can be relied on, there will be considerable advantage from inducing anæsthesia, if the scoop should require to be frequently employed in removing broken portions of the lens from the anterior chamber. Preliminaries being over, the incision of the cornea is made by means of a triangular-shaped knife, sharp at the point, keen on both edges, and about two and a half or three lines broad at its base. It should enter the cornea near its outer margin, and pass horizontally in front of the iris, until the whole length of the cutting edges has penetrated the anterior chamber. The knife is then with-

drawn, care being taken that as little as possible of the aqueous humour be allowed to escape. The next stage of the operation consists in passing fine cutting needle into the opening, freely dividing the capsule, breaking up the substance of the lens, and bringing the fragments into the anterior chamber. Most of the latter will, in all probability be carried out by the aqueous humour, as it gushes through the wound of the cornea; but, if this should not be the case, we withdraw the needle, and with a small silver scoop, made for the purpose, endeavour carefully and gently to effect the same object. But, as we have already hinted, there is no serious objection to our allowing small fragments of the cataract, which is supposed to be of soft texture, to remain in the anterior chamber; for the wound in the cornea speedily heals, the aqueous humour is re-secreted, and the remaining portions will rapidly disappear. It is better far to trust to this course of events, than to give way to the *nimia diligentia chirurgorum*, which, by bruising the edges of the wound, might prevent it from healing, and perhaps occasion serious inflammation of the iris with all its consequences.

Some prefer breaking up the cataract, in the first place, with a very fine cutting needle, so accurately made as not to let out the aqueous humour, and then making the incision of the cornea in the manner already described. The objections to this are of a practical nature: the extreme difficulty of withdrawing the needle without allowing a little of the aqueous humour to escape, and then the ulterior difficulty, of cutting in a satisfactory manner with the triangular knife the imperfectly distended cornea. To obviate this latter difficulty, the second part of the operation might be postponed until the following day, when the aqueous humour would be re-secreted; but then there might be some risk of inflammatory action being kindled by the portions of lens which had been brought into the anterior chamber. No general rule need be laid down. The principle of the operation being kept in view, the details may be modified in individual cases, according to the judgment of the surgeon.—*Edinb. Med. Journal, Sept.*, 1859, *p.* 250.

96.—ON THE USE OF FORCEPS IN EXTRACTION OF CATARACT.

By Mr. FRANCE.

[There is perhaps no operation more variable, in facility of execution in different cases, than extraction of cataract. The great point in the operation is that first performed—the section of the transparent cornea.]

What creates the main obstacle to the ready accomplishment of the section in any given case, and renders arduous perhaps in a plump model globe, that which may be found comparatively easy in an ill-formed deeply-set one, should the condition referred to not

exist? Undoubtedly the principal impediment the surgeon has to encounter, is the irregular mobility of the eye, with its restless twichings and sudden glancings under the excitement and apprehension of the eventful moment; together with its occasional rapid inversion towards the inner canthus (perhaps without previous warning from unsteadiness, and notwithstanding the opposing finger's pressure) when the section is in actual progress, and when this movement imperils to the utmost its normal completion. Hence this operation, in the same hands, varies to an extreme in difficulty, owing to the differing degrees in which these movements prevail in the organ submitted to manipulation. Accordingly in the dead-house the process is easy enough; probably under chloroform, were its exhibition admissible, (which. on distinct grounds, is not the case,) it would be the same. So, again,—to take a parallel illustration:—a thousand sempstresses in London thread their fine needles fifty times a day, with scarcely a conscious effort, because, minute as is the orifice they aim at, they have the implement at perfect command; but let the workwoman try to attain her end, while the needle is held by her aged mother with paralysis agitans, or by her sister with chorea, and the delicate task would become nearly impracticable. Just in the same way with this operation; the great desideratum is steadiness and fixity of globe, because any irregular or convulsive movement, by jeopardizing the precision and continuity of the section, the retention of the aqueous humour to the last, and (contingently thereupon) the safety of the iris, enhances so seriously, despite the highest skill, the danger of this critical stage.

I have elsewhere shown how early, in the history of extraction, this truth was recognized; how various have been the contrivances which the exigency has at different times called forth: and how all have successively become obsolete, on account of some prevailing disadvantage attending them. On the same occasion I recommended the employment of simple artery forceps, as conducing in a marked measure to fix the eye steadily in the wished-for position, and as exempt from any of the drawbacks which had caused previous suggestions to fail. The recommendation was supported by the detail of twenty cases, proving the practicability and utility of the plan proposed. Winter has since intervened, and I have consequently but seven additional cases to supplement the former list. In all of these, however, the forceps was used with as good effect as in the preceding instances; the fixed cornea afforded an uniform resistance to the knife; the section was accomplished with proportionate ease without casualty (save, in one example, wherein, from the extreme prominence of the globe, some vitreous escape was predicted, and took place accordingly), and the patients are now, without exception, enjoying good vision.

My present purpose is to confirm what was before said in advocacy of this appliance: and to notice two or three minutiæ, which should be observed in adopting it: as, it is to be hoped, many, during the

ensuing season, may be induced to do. In order not to exceed due limits in this communication, I will condense my remarks into the briefest compass:—

1. As to the form of forceps: an ordinary pair of artery forceps, without spring-catch, is the most convenient. It should be rather long, with broad nibs, and prominent or projecting teeth, so as the better to take hold of the subconjunctival fascia simultaneously with the mucous membrane itself.

2. With this view, at the commencement of the operation, the surgeon, in affixing the forceps, should make pressure with its nibs against the sclerotic, at some little distance beneath the cornea, 'ere closing them with the fold of tissues in their grasp. This is an essential point, as the lax conjunctiva, if seized alone, affords a much less firm anchorage to the globe.

3. The assistant to whom the forceps is delivered, should be instructed to rest his hand quietly upon the patient's face, and maintain the cornea in the central position as passively as possible,—by gentle traction if requested; but scrupulously to avoid either dragging or pushing with the instrument.

4. The operator, raising the upper lid with his forefinger, places that finger in the usual manner on the sclerotic above the cornea, and his middle finger on the sclerotic at the inner canthus, and thus completes his command of the globe.

It will be observed that this method of operating does not involve the *substitution* of one means of fixing the eye for another, but comprises the recognised and general plan, *plus* the effectual auxiliary I am describing. It will be observed, too, that the forceps, while maintaining the globe in the most convenient position, performs incidentally the subordinate function of keeping the lower lid depressed.

5. The incision of the cornea is made in the regular way; but when counter-punctuation is fully effected, just before the final completion of the flap, the forceps should be gently disengaged. Should there be evidence of spasm, an interval may be here interposed before the last bridle of cornea is severed, as the adequacy of the section and the safety of the iris are now insured; but this is seldom necessary. The remainder of the operation proceeds in the customary mode.

Two objections have been advanced against the use of forceps. The more important is, that it might tend to excite spasm, and consequent rupture of the hyaloid membrane, and escape of vitreous humour. The other, that it must inflict an injury on the conjunctiva, which might prove seriously detrimental to the ultimate issue of the case. With regard to the first: as a matter of fact, it will not be found that spasmodic action is created by the instrument, except, perhaps, at the first moments of its application; when every nervous patient's eye, open it how we will, is apt to be thus affected from alarm. Moreover, if the forceps is detached before the final completion of the section, as

it always should be, it is at the surgeon's option, should spasm actually arise, to pause for its subsidence before proceeding; and until he proceeds to divide the remaining corneal isthmus, no mischief can be produced by the occurrence.—The second objection is a very natural one, but entirely at variance with daily experience. I use the forceps in keratonyxis as well as extraction; it is pretty generally employed in London in cases of artificial pupil; sometimes in removing extraneous bodies from the eye; and, in short, on every occasion (extraction hitherto excepted), when it is desirable to fix the globe; yet mischievous results from the contusion of the conjunctiva are quite unknown.

I will add no more than the expression of my earnest hope, that the use of forceps, in extraction of cataract, may be submitted extensively and impartially during the approaching summer to the ordeal of practice. It will then be found, that, by this simple means the section of the cornea may be accomplished with a precision and certainty unattainable before; and the habitual employment of forceps will be recognized as a signal improvement and safeguard in this operation; making it in expert hands still surer,—in those of the less skilful or less experienced comparatively sure.—*Oph. Hosp. Reports, April* 1859, *p.* 21.

97.—NIGHT BLINDNESS IN CONNEXION WITH SCURVY.

By Dr. Alexander Bryson.

[On carefully examining the eyes in this affection no alteration whatever can be perceived in the tissues anterior to the retina. It seems fair, therefore, to suppose that the disease lies in the retina, or else in the nerves and brain behind it. Further, as this curious affection rapidly disappears when proper diet has been obtained, it is evident that the changes are not of a permanent or organic nature.]

Night-blindness, most unquestionably, occurs much more frequently in scurvy than is generally supposed, but in consequence of the simultaneous existence of some more serious symptom, or of symptoms of a less ambiguous character, it frequently passes unnoticed. In fact, in the naval service, patients are generally placed on the sick list before it occurs, or at all events before it becomes so decided as to induce the patient to complain of it. Still it is almost certain that scurvy occasionally shows itself without any concurrent defect of vision, while there are other instances in which nearly every second case is accompanied by it.

The following is a remarkable instance of the prevalence of the disease, in connexion with scurvy. The crew of her Majesty's brigantine, "Griffon," employed on the west coast of Africa, for the prevention of the slave-trade, had been victualled on salt rations for five months consecutively, when several of the men began to complain

that they could not see to do their duty on deck at night, though the moon shone brightly at the time. Amongst themselves it was called moon-blindness, consequently it did not cause much alarm, until out of about fifty white men twenty-two were affected, and immediately after the sun went down, they had to be led about on the upper deck, in a helpless state of blindness. There was now just cause for alarm, as the vessel with so many men unfit for night duty, was hardly a match for any of the well-armed slavers so common on the coast at that period. Fortunately a man presented himself, complaining of a sore, and a swelling on the calf of one of his legs, the true nature of which there was no mistaking; on examining his gums they were found to be swollen and spongy. He was one of those affected with night-blindness; the other men similarly affected were next examined; as well as those whose vision by night was still good, when it was ascertained that all the former presented the most unequivocal symptoms of scurvy, and a few of the latter had spongy gums. The officers, five in number, were not attacked either with scurvy or night-blindness, but they had a more varied diet than the men. To obtain fresh meat, fruit, and vegetables the vessel anchored at Prince's Island, and three days afterwards nearly the whole of the hemeralopic patients had entirely recovered their vision.

The ship's company of the "Dolphin," another African cruiser, had, in the year 1851, been a long time without obtaining any supplies of fresh meat or vegetables, consequently scorbutic symptoms made their appearance, and at the same time there were ten cases of night-blindness. The medical officer mentions, that nearly all these men were able to distinguish objects at the distance of three yards by candle-light, and even to read a book held close to the candle, but the instant they went on the upper deck, they gradually began to lose sight of surrounding objects, and had to be led about from place to place. A few could plainly distinguish the stars and the top-gallant masts and yards, but below that plane they could not see anything. Two cases occurred in the "Dart" while employed in the Mozambique Channel, for the cure of which blisters and various other means were used; one improved, but the other resisted various modes of treatment, until the vessel anchored in Simon's Bay, and fresh provisions were issued to the crew, when the patient, to the astonishment of the assistant-surgeon, suddenly got well.

Scurvy made its appearance in several vessels in the Black Sea in the year 1854, and with hardly an exception it was accompanied with night-blindness. In the "Vengeance" eleven men were put on the sick-list for scurvy, but many others were suffering in a less degree. Eight cases of night-blindness occurred at the same time; some of these patients showed scorbutic symptoms, while others were apparently free from them. None of the officers were affected with either of these diseases, which were simultaneously removed by a better diet.

In 1855 there were upwards of seventy cases of scurvy in the "Euryalus," but two only of night-blindness were noticed. Her Majesty's ship, "Brisk," was seventy-two days in making a passage round Cape Horn to San Francisco, consequently during all that time no fresh meat or vegetables could be procured. Before she reached the above port, the surgeon examined the men, and found twelve with scorbutic symptoms; seven cases of night-blindness had occurred during the passage, and four of these were the worst cases of scurvy. They all recovered immediately after they had obtained fresh meat and vegetables.

One of the most remarkable instances of scorbutic night-blindness occurred in the "Winchester," while she was returning from India. Twenty cases were entered on the sick-list between Trincomalee and the Cape of Good Hope, but they all recovered when the vessel anchored at Simon's Town, and fresh provisions were issued to the crew; on the passage between the Cape and England, however, when the men had been for some time victualled on salt provisions, the disease reappeared in the same persons, and continued until they had obtained fresh provisions at Spithead.

In convict-ships proceeding to Australia, both scurvy and night-blindness have frequently made their appearance, but the latter often escapes notice in consequence of the prisoners being sent down into prison either at, or a little after sunset. In the "Marquis of Hastings," which conveyed prisoners to Hobart Town in 1841, many cases of scurvy occurred, and there were ten of night-blindness, which presented no other symptoms of scorbutic disease.

In all these, and in many other instances of a similar nature, the appearance of the disease simultaneously with scurvy, and its sudden disappearance when a better diet is obtained; the absence of the disease in vessels in which the men have a sufficiency of fresh meat and vegetables, even though employed in the same localities with others in which it has made its appearance, shows that it is entirely dependent on an improper or erroneous diet.—*Ophthalmic Hosp. Reports, July* 1859, *p.* 40.

98.—*Acute Rheumatic Ophthalmia: recovery under Morphia Treatment.* (Case under the care of J. Z. LAURENCE, Esq., South London Ophthalmic Hospital.)—[The patient was a middle-aged woman, admitted into the hospital, suffering from a severe attack of acute rheumatic ophthalmia. The sclerotic was intensely injected, the sclerotic zone being well marked. The pain was intense, but the vision not materially impaired.]

She was ordered to foment the eye frequently with warm water, and to take a quarter of a grain of hydrochlorate of morphia every third hour.

November 6th. She took the morphia regularly up to 4 P.M. yes-

terday, when she took the last powder. Towards the evening of the 4th, the pain in the eye began to abate: now, the severe shooting pains have entirely left her; she experiencing only an aching in the eye when it is exposed to the light. The sclerotic vascularity has considerably diminished.

The eye now rapidly recovered under the treatment of an ordinary case of conjunctivitis.

Mr. Laurence has now treated a number of cases of inflammation of the sclerotic and iris by morphia, without the use of mercury or blood-letting (usually employed in these cases). He finds that the majority yield to this very simple (morphia) treatment, especially those in which intense pain is a prominent symptom; but that a certain number of cases remain, in which the old plan of treatment is the better to pursue.—*British Med. Journal, July* 9, 1859, *p.* 538.

99.—ON THE SYMPTOMS, DIAGNOSIS, AND SURGICAL TREATMENT OF GLAUCOMA.

By J. W. Hulke, Esq., Assistant-Surgeon to King's College Hospital, and to the Royal London Ophthalmic Hospital.

[At p. 265 of vol. xxxvii. will be found an article on this subject by Mr. Hulke. He fears that the adoption of Graefe's operation of iridectomy in glaucoma is not so much employed and valued as it ought to be; much difference of opinion prevailing as to its value.]

The extreme differences of opinion respecting the value of iridectomy in glaucoma, expressed by those who have personally tried the operation, have no doubt arisen from the indefinite nature of the cases which have been classed under this denomination, a greenish colour of the pupil having been taken as the distinctive character. The value of any operation in a given class of cases can only be correctly estimated when the character of the cases has been previously fixed and determined; and this has been done for glaucoma by Dr. A. von Graefe, who has so fully and accurately defined its symptoms, that he has left little to subsequent observers but to confirm his statements. He, in common with all surgeons, recognises two forms of this disease, the chronic, and the acute, which differ in degree but not in kind; between these extremes there is a large proportion of intermediate cases.

Symptoms. Premonitory Period.—In seventy-five per cent. or more, both of chronic and acute cases, the more obvious outbreak is preceded by a premonitory period (prodroma), which may be extended over a space of several months, or weeks, or be limited to a few days only; the symptoms are in some cases so slight as hardly to excite attention, and this especially amongst the lower classes, who pay but little heed to trifling ailments. These premonitory symptoms are occasional dimness, with pain in the eyeball, and sometimes headache

They are at first transient, often happen towards evening, and occur at long intervals. Afterwards accessions become more and more frequent, till, at length, the dimness is persistent and the pain chronic; but still with remissions and exacerbations. The subconjunctival veins begin to enlarge and become varicose; the pupil is rather dilated and sluggish, and the globe feels hard. Meanwhile the field of vision has undergone a remarkable contraction, progressing from the periphery towards the centre. Patients still see objects placed directly before them fairly; but cannot see things which lie on one side.

Active Stage of Chronic Glaucoma.—In chronic glaucoma the premonitory merges gradually into the active period. The ciliary region is congested, the radicles of the varicose subconjunctival veins encircle the cornea with arches. The aqueous humour becomes serous, the pupil muddy, and adhesions form between it and the lens. The size of the anterior chamber diminishes, the iris being pushed forwards towards the cornea partly by the lens, and partly by the collection of serum behind it. The cornea loses its lustre, resembles a piece of glass which has been breathed on; its epithelial layer is raised in minute vesicles, and its sensibility much impaired. The sclerotic has a dirty leaden hue and staphylomata form, generally just behind the insertions of the tendons of the recti muscles. The globe is now very hard, and sight is limited to bare perception of light, or wholly abolished. We must be careful not to be misled on this last point, because luminous spectra often happen long after all sight is lost, and we may be unintentionally deceived by patients reluctant to believe themselves blind.

Acute Glaucoma.—The acute differs from the chronic form mainly by its terrible intensity; it is preceded by the same train of premonitory symptoms; but the outbreak is often so sudden and so violent that the earlier warnings are forgotten in the present storm. The attack often takes place at night. The patient wakes with violent throbbing pain in the eye, intolerable headache and sickness, and rapid blindness ensues. The pupil is widely dilated, fixed, and the globe very red. Patients have not unfrequently ascribed their blindness to a violent attack of bilious headache. After some hours, perhaps, a remission of the symptoms occurs; the pain abates, sight partially returns, and the patient is full of joy at his improvement; but his hopes are soon shattered by a fresh paroxysm. It was only a temporary improvement, and fresh accessions sooner or later bring total blindness.

Ophthalmoscopic Signs.—The ophthalmoscopic signs of glaucoma are, excavation of the entrance of the optic nerve, the presence of visible pulsation in the retinal vessels, and often hemorrhagic extravasations into the retinal tissue and vitreous humour. Excavation of the entrance of the optic nerve is indicated by a peculiar tint, and by a very remarkable arrangement of the vessels which are abruptly bent, or seem suddenly to disappear at the margin beyond which they

cannot be followed to the centre of the entrance; this is particularly the case with the veins. When the tension of the globe is much increased a visible pulsation in the retinal vessels takes place, and if not present spontaneously a very slight pressure upon the globe with the finger will produce it instantly. The excavation of the optic nerve comes on gradually with the increasing tension of the globe. This part offers less resistance than the tougher sclerotic, and yielding before the excessive intraocular pressure is bulged outwards; a wasting of the nervous fibrils accompanies this important change. From this it will appear that in glaucoma the excavation of the optic nerve is due to two causes, one mechanical, the other vital, pressure and wasting,—the second consequent on the first. Now it has been very recently denied that this change in the shape of the entrance of the optic nerve in glaucoma is ever due to pressure, it being alleged that a degree of pressure which could push the entrance of the optic nerve outwards must necessarily also push the lens and iris forwards, and that extreme excavation of the optic nerve has been observed in cases in which excessive tension does not exist, and in which there is no history of its ever having been present, in which also the anterior chamber preserves its natural dimensions. Such cases do occasionally occur, they were actually described by Graefe in a Memoir on Glaucoma addressed to the French Institute, 1857, and in the "Archiv für Ophthalmologie," Bd. iii. Abth. ii., under the designation of "Amaurosis with excavation of the optic nerve." The morbid anatomy of these cases has been investigated by Heinrich Mueller, and I have myself dissected the hollowed optic nerve-entrances of eyes which certainly at the time of their removal, during life, were not over-tense, and in which over-pressure had probably never been present. In these cases the tubules of the optic nerve have more or less completely disappeared; the surface of the hollow is formed by the membrana limitans (hyaloid membrane) resting upon the connective tissue of the lamina cribrosa and that of the framework, derived from the inner layer of the sheath of the nerve, which separates and supports the bundles of nerve-tubes and which is normally continued upwards as a delicate nucleated fibrous tissue, even through the lamina cribosa to the hyaloid membrane. This, then, is excavation of the entrance of the optic nerve from wasting and disappearance of its tubules, a change which has occurred without the agency of pressure, but it does not legitimately follow from this that the hollowing out of the entrance of the optic nerve in glaucoma, in which a similar atrophy also occurs, is also independent of pressure. Wasting of a tissue may be induced in several ways, and constant pressure is a most efficient cause before which the hardest and softest tissues alike disappear.

But over-tension is the leading feature of glaucoma, and it seems only natural to consider the hollowing and wasting of the optic nerve as one of its effects. To these signs, excavation of the optic nerve-entrance, and visible pulsation of the retinal vessels, a third is often

added, especially in acute glaucoma. Minute ecchymoses, points of capillary hemorrhage appear in the retinal tissue by the rupture of the over-distended capillaries. Often the membrana limitans gives way, and small filmy bloodclots form in the vitreous humour, which becomes tinged with the hæmatine, and in specimens which I have dissected the stain extended to the lens, which had a yellow colour by transmitted light though during life it was greenish. Later in the disease the vitreous humour becomes clouded, and the lens and cornea opaque, and the ophthalmoscope can no longer be used.

Prognosis.—The prognosis is allowed by all to be a most unfavourable one. Blindness is the natural termination, and the pain often persists long after sight has been entirely lost,—pain sometimes too of the most wearing kind.

Treatment.—Every candid person must confess that all known medical treatment fails to cure glaucoma, because it fails permanently to relieve the over-tension of the globe. General antiphlogistic measures are inapplicable, because the subjects are feeble, and local depletion by cupping or leeches affords only very slight and very transient relief. Those who trust to measures of this kind let their patients drift into blindness. But practice has put it beyond doubt that the removal of a portion of the iris of an over-tense eye does permanently lessen the excessive tension, and, therefore, does cure glaucoma. The fact is not to be denied though a satisfactory explanation of its *modus operandi* may be still wanting. For the details of the operation itself, I must refer to a paper in Medical Times and Gazette (Retrospect, vol. xxxvii., p. 265). I have nothing more to add to what I then said, except that I believe an ordinary Beer's extraction knife to be a safer instrument for incising the cornea, than the lance-shaped knife of Jaeger, with which, as its point is directed inwards towards the centre of the anterior chamber, and therefore towards the vertex of the lens, there is greater danger of wounding this structure. In about two hundred operations performed with Beer's knife, which in making the corneal wound, only skirts the margin of the anterior chamber, the lens has, I believe, only been injured in three or four cases. In two cases the suspensory ligament gave way, vitreous humour was lost, hemorrhage into the globe took place, and the eyes suppurated. The immediate effect of the operation is to lessen the tension of the globe; the wound heals in a couple of days, during which the aqueous humour drains away, but when union is quite complete, and the integrity of the anterior chamber is restored, the globe still continues naturally soft. The most complete results are obtained in acute cases, when the improvement of sight is very rapid and striking, and the cessation of pain equally so when the operation has been early performed. In chronic cases the improvement of the sight is gradual, extending over some months; its degree depends on the progress which the structural changes in the retina and optic nerve had made previous to the operation, and in these cases they

advance *pari passu* with the growing pressure; but even where the sight is not improved, the operation generally arrests the disease and preserves what sight the patient had at the time of operation. In chronic glaucoma, too, the pain does not always cease at once, but sometimes subsides gradually, just as in tic douloureux it frequently persists for several days after division of the affected nerve.

Alleged Objections.—Those who oppose iridectomy in glaucoma do so on the alleged grounds (1) of its futility; (2) of the danger to be apprehended from operating on an eye in a state of intense congestion; (3) of the difficulty of so delicate an operation, for which they would substitute paracentesis of the cornea or sclerotica. These objections are of small value, because they are not founded on practice, from which alone true inferences can be drawn. I will take them seriatim.

1. Facts abundantly prove, that iridectomy does cure this disease. I have been told that patients who had been operated on in the Royal London Ophthalmic Hospital have been afterwards seen at other Hospitals perfectly blind; and, indeed, it would be surprising if this were not the case, because the operation has been frequently done simply to relieve pain at a time when no restoration of sight could be looked for and no expectation had been held out.

In a few exceptional, very advanced cases of chronic glaucoma, the over-tension of the globe has returned after the operation, and the pain has not been relieved. In these cases the tissues of the globe are so unsound, its vascular system is so completely deranged, and the excitement of the ciliary branches of the fifth nerve has become so habitual that no measure short of extirpation will afford complete and permanent relief.

2. Practice shows that iridectomy is the most efficient measure with which we are at present acquainted for reducing the intense internal congestion, which is present in acute glaucoma.

3. The difficulties of the operation are not insurmountable; they may be overcome with a little care. They were pointed out in the paper to which I have already referred, and directions were, at the same time, given by which they may be avoided. Less extensive removal of the iris is insufficient; its whole breadth must be taken away so as to expose the edge of the lens and the suspensory ligament. Paracentesis of the cornea affords but an incomplete and transient relief; and it is futile to tap the sclerotic, because the vitreous humour is too firm to flow out, even through a considerable wound.

Lastly, It has been and still is urged that the operation has been very indiscriminately performed. This allegation does not affect the operation itself, but insinuates a want of discrimination on the part of the operator. I would state it in another way—the operation has been experimentally tried in a number of cases, which though not true glaucoma, showed an affinity with it; or where there were local signs of a relative excess of pressure, as in staphylomata of the sclerotic

and cornea; and lastly in a few cases of acute phthisis bulbi, where the rapid wasting of the vitreous humour shown by the softness and collapse of the globe indicated a sudden arrest of nutrition.

The results confirmatory of Graefe's statements have proved, that in recurrent iritis and choroido-iritis, where there are numerous synechiæ, the tendency to fresh accessions is lessened and destroyed by iridectomy; that considerable staphylomata subside under its influence; and that soft and collapsing globes become plump and acquire a natural tension. Who then will assert that in these cases the operation has been indiscriminately performed? How can the value and scope of any remedy be ascertained except by a series of experiments? Without these progress would stand still and therapeutics become a stationary art.—*Med. Times and Gazette, Aug.* 6, 1859, *p.* 127.

100.—NEW OPERATION FOR THE RELIEF OF THE PAIN IN ACUTE GLAUCOMA.

(Case under the care of H. HANCOCK, Esq.)

[Von Gräfe gives no theory whatever of his operation for the relief of acute glaucoma; yet we must acknowledge, notwithstanding its empiricism, that its performance is frequently followed by relief. The plan resorted to by Mr. Hancock is, however, preferable to Gräfe's for reasons mentioned in the details of the subjoined case. The patient, a boy of fifteen, two years previously, injured his eye by a blow from a knife: the sight was destroyed, but there was no apparent breach of continuity. Two months before admission, pain and swelling of the eyeball came on; at first gradually, then more rapidly, till the globe became twice the size of the other; masses of the capsule of a disorganized lens were visible. The right eye was healthy.]

On the 9th of September, Mr. Hancock introduced a Beer's cataract knife at the junction between the cornea and the sclerotic, the blade being inclined downwards, the point proceeding inwards and backwards. The place of puncture was the commencement, on the outer side, of the lower semi-circumference of the cornea. The point of the knife, now having traversed obliquely the layers of the cornea, was pushed backwards towards the interior of the globe, thus dividing the ciliary ligament in a portion of its extent. On the removal of the knife, a quantity of discoloured fluid escaped.

Mr. Hancock, considering that the great pain was due to tension of the iris and ciliary ligament by accumulated fluid, the product of the disorganized parts behind, believes that all the indications for the relief of the suffering will be fulfilled by this operation. And its advantages are:—

1. By the situation and oblique direction of the incision, a free drainage of the fluid is provided for.

2. The iris is very slightly wounded.

3. The pupil is preserved, of its original size, and in its normal situation.

4. The operation is very simple, and is performed remarkably quickly.

Sept. 10th. Except for an hour or so after the operation, the patient has suffered no pain. The operation gave relief. He has slept perfectly well; before this, he has been frequently awakened by the pain induced by pressure on the eyeball from turning in bed.

11th. Eye perfectly easy during the whole day.

12th. Not the slightest pain, even on considerable pressure; the eyeball feels much less tense; the pupil is less dilated: no prolapse of iris through the wound.

21st. Has gone on uninterruptedly well since last report; there has not been the slightest pain; the size of the globe has sensibly diminished; the pupil is far less dilated than it was before the operation; and the globe, instead of being hard and resisting, now easily yields to the touch; pressure upon it occasions no pain.—*Lancet, Oct.* 29, 1859, *p.* 435.

101.—*Laudanum in Weak Vision of the Aged.*—Professor NASCAR, of Naples, says, that in the case of aged persons whose sight is becoming enfeebled and requires the aid of convex glasses, great advantage is derived, supposing no nervous lesion exists, from painting every evening the eyelids and brow with laudanum, and allowing this to remain on all night.—*Med. Times and Gazette, July* 9, 1859, *p.* 42.

102.—NIGHT BLINDNESS WITH SCURVY IN THE CRIMEA.

By J. C. OVENS, Esq., (9th Regiment.)

Private John Grady, of the 9th Regiment, was admitted into the Regimental Camp Hospital before daylight on the morning of 13th February, 1855.

He stated that he formed one of the advance on the Woronzoff road on the previous night, and that he and a comrade were directed to keep a sharp look-out, which they agreed to do by turns; that, about half-past three, he fell asleep for a few minutes, and on awaking was surprised to find that he had totally lost his sight.

He was immediately taken up to camp, where he was attended to; he stated that he had no pain or ailment with the exception of the total, and to him unaccountable, loss of sight. When a candle was brought into the tent, some vision returned, but he could not see the flame distinctly, and said it seemed as if surrounded by motes. The pupils were very much dilated, more particularly the right; both acted freely; no abnormal vascularity of any of the textures of the eye was visible. The entire cornea seemed prominent, but this was said to be their normal state.

As the day-light returned, he recovered his sight, but all through the day he complained of a sort of haze and a dimness, with constant symptoms of muscæ volitantes.

The nights at the time were very dark, and there was about four inches of snow on the ground.

There were no remarkable symptoms preceding his attack which came on regularly as night approached. On very bright moonlight nights he could see a little, but could not discern any small or dark object, and the looking at them caused him severe pain in the eyes for rather more than six weeks. It then began gradually to wear off, but he had occasional relapses both on dark nights and when exposed to a very bright light. He was always near-sighted, and this did not seem to be increased by the attack.

This man, in common with his comrades, was and had been for three months enduring the greatest privations, exposed to constant night-work in the trenches; his clothes were scarcely ever dry, and his food consisted for the most part of salt meat and biscuit. He had been suffering from that diarrhœa which in the Crimea was considered scorbutic, as it was neither true diarrhœa nor dysentery, but a state of the bowels which was induced by the bad living.

The treatment consisted in the administration of quinine, ipecacuanha to try and promote the action of the skin; blisters to the temples, with belladonna round the eye; but good living with fresh meat and vegetables being soon afterwards procurable, these seemed to benefit the patient more than any thing else.—*Ophthalmic Hosp. Reports, July* 1859, *p.* 37.

103.—*The Ophthalmoscope.* (From notes of Mr. HAYNES WALTON'S practice at the Central London Ophthalmic Hospital.)—The ophthalmoscope continues to be carefully attended to, and we take this opportunity of alluding to a fact in connexion with it that may be useful to our readers. As a matter of course, when the pupil has been dilated for the examination of an eye with tolerable or nearly good sight, considerable imperfection of vision ensues, and nothing is more common than for persons to declare that the use of

the ophthalmoscope has been detrimental to them. This is, of course, owing to their ignorance of the subject; but the false impression may be generally evaded by forewarning the patient of the influence of the atropine, and the inconvenience may be reduced by using a very weak solution—a quarter of a grain to the ounce, so that, although the dilatation is but slowly produced as compared to the stronger formula, the effect passes away much quicker, and the adjustment of the other eye is not interfered with. Besides this, whenever the eye can be examined, as it often can, in the natural state of the pupil, this should be done, and it may be effected for all practical purposes more frequently than is supposed. Mr. Walton is in the habit of first ascertaining whether it can be effected, and not till it cannot does he dilate the pupil. We saw a case there about a fortnight ago in which incipient cataract was discovered by the use of the ophthalmoscope, after full dilatation, which could not be observed in an ordinary examination. In this case the opacity was at the circumference of the lens; and when viewed by means of the ophthalmoscope, presented a few dark spots at the margin, which gradually faded as they approached the centre, and appearing as if composed of a number of dark lines converging towards the centre. On bringing this patient to the light, and looking carefully towards the circumference of the lens, the opacities could be seen as small white specks, that might easily escape detection with the naked eye.—*Med. Circular, Sept.* 7, 1859, *p.* 117.

104.—*A New Ophthalmoscope.*—An ophthalmoscope, fitted with adjusting tubes, rests for the patient's head, &c., by which the merest tyro may be enabled to see the deep structures of the eye, is now in use at the Ophthalmic Hospital. It is made by a Berlin optician, at the suggestion of M. Græfe and his assistant. Unlike the one hitherto in use, it is a large cumbrous affair, and requires to be fixed to the table or elsewhere before use. The patient's head being fixed against a rest, the telescope slides of the instrument are adjusted to a proper focus, and this once effected, a dozen observers in succession may look through the eye-piece, and all of them see exactly the same part of the retina without any trouble. It is, indeed, like looking through the tube of a microscope; the object never gets out of focus, and the proper adjustment having been effected by a skilled hand, any one can see the object. The common hand reflector and lens require a long training before they can be effectually used. For purposes of demonstration to a class the new instrument will doubtless soon throw the other out of use, since it prevents the loss of time and risk of annoying the patient's eyes, which a succession of inspections involves. To one well trained, however, so that he can find the optic entrance, yellow spot, &c., with perfect ease, we doubt whether the new instrument will add much. Its cumbrous size will

confine it to the consulting-room or public institution, but at the the latter for class purposes it promises to be invaluable. To the artist also it is a great relief, since it leaves the hands at liberty; and to draw from the ophthalmoscope is, with its aid, just as easy as to draw from the microscope. Its cost as at present made is, we believe, about five guineas. No doubt it will soon be to be had in the London shops.—*Med. Times and Gaz., July* 9, 1859, *p.* 34.

105.—*Removal of Foreign Bodies from the Ear.*—Dr. Archibald recommends the following as a very effectual procedure: Upon the back of a circular piece of isinglass or court-plaister, two lines in diameter, a piece of thread twelve or fifteen inches long is to be attached by a very narrow strip of the same material, placed at right angles over the thread. When this is dry, a piece of muslin or cotton cloth is to be torn, two inches long, and broad enough to be rolled around both arms of the thread into a cylinder of required size and firmness. The ends of the thread should next be drawn so as to bring the plaister upon the extremity of the cylinder, around which one end of the thread may be wrapped, to keep it from unfolding. The meatus should now be freed from moisture, by means of a little lint or cotton; and the surface of the plaister should be wetted and applied to the foreign body. Adhesion will take place in five or ten minutes, and then the body may be removed with the plaister.—*Med. Times and Gaz., Oct.* 8, 1859, *p.* 367.

MIDWIFERY,

AND THE DISEASES OF WOMEN, ETC.

106.—ON THE PHYSICAL DIAGNOSIS OF SPURIOUS PREGNANCY.

By Dr. J. Y. Simpson, Professor of Medicine and Midwifery in the University of Edinburgh.

[After touching upon Auscultation, which is merely a negative sign, and Percussion which is of much value in many cases, especially in discrimination of cases of mere tympanitis, the author passes on to tactile examination, and observes, that there is in many of these cases a firm unyielding swelling of the abdomen, which might be supposed to be due to enlargement of a gravid uterus, but is in reality due to a tympanitic condition of the bowels, combined with a peculiar tonic condition of the abdominal muscles, which are so firm and tense, as to render it utterly impossible to make out the size and contour of the uterus.]

Chloroform will generally solve the difficulty completely, if only given deeply enough. When the patient is fairly put to sleep with chloroform the tense abdominal muscles become perfectly relaxed, and on pressing on the abdomen, you will find that the walls will give way before your hand, and sink backwards till you can feel the spinal column quite distinctly, and you then find the uterus to be of normal size. The phenomena presented by that phantom, tumefaction of the abdomen, while the patient is being anæsthetised are very singular. When the patient lies down on her back, and the abdomen is uncovered, it is seen to be projecting, swollen, rounded, and defined, like the abdomen of a pregnant woman; but generally, as I have said, with an appearance of unusual constriction around the lower edge of the ribs. No change occurs during the first stage of the administration of the anæsthetic, and until the period of excitement has passed over, the swelling continues, and the muscles remain rigid and tense as at first; but gradually as that stage passes off, and the respiration offers to become sonorous, the muscles begin to be drawn in, and the abdomen slowly flattens, until it assumes its proper size, or even becomes depressed and relaxed, like the abdomen after delivery. So long as the patient remains in a deeply anæsthetic state, you can make the most complete and satisfactory examination of the state of

the uterus, and, indeed, of all the abdominal organs; and you may have recourse to this expedient with perfect safety and success in doubtful cases of real pregnancy also. But when she comes out of her sleep again, in a case of spurious pregnancy, the muscles begin to arch up and to become tense as before, so that by the time the patient is fully awake the abdomen is as large and rounded as ever, and the necessary examination again becomes painful. For, as I have already hinted, the patient has sometimes in pseudocyesis a degree of tenderness in the abdomen that renders her very intolerant even of a slight amount of pressure. The patient having wakened up and found the apparent tumour still present, fails herself to be convinced of the fact that it had, for a time, been dispelled. But you may, perhaps, convince some of her friends of the absence of any real tumour, and their corroborative assertion may go far to bring her to a sound and proper belief afterwards. I had once a poor peasant's wife, from Berwickshire, with spurious pregnancy, who bothered all her friends, and kept them in a state of continued anxiety and trouble, because she was always going into labour, until she had arrived at a period which corresponded in her reckoning with the thirteenth month of utero-gestation. She was one of those persons whom it was utterly impossible to convince by any argument of the true nature of her affection; and her great confidence in the reality of her pregnancy had imposed on her friends, and led them for long to share in her kind of monomania, —for, after all, the mind is really in such a morbid state in some of these cases as to deserve the name of monomania. Having put her under the influence of chloroform, I called her sister into the room, and made her feel the spine through the collapsed abdominal walls, and succeeded thus in demonstrating to her entire satisfaction that there was no child in her sister's abdomen. But the patient waking up, and finding no change in her condition and form, might have remained unshaken in her belief, and, indeed, was still for stoutly affirming that she was pregnant, when her sister shut her up with, "Haud your tongue, woman! You've naething in your wame, for I felt your backbane myself with my ain hand!" I have no very satisfactory explanation to offer you of the nature of this very strange abdominal swelling, and of the peculiar phenomena observed in it, when the patient is in a state of anæsthesia. Some years ago I made a number of observations on some of our hospital patients, to try and solve the difficulty. Some medical friends who had been told of the remarkable effect of the chloroform were quite certain that the swelling must have been due to distension of the bowels with gas, which, they averred, must have escaped unobserved when the sphincter was relaxed during the deep sleep induced by the drug. But that this was not the proper explanation we easily proved by introducing a tube into the rectum, and putting the free end of it under water, and then finding that no bubble of air escaped during the anæsthetic subsidence of the swelling. I believe that the phenomenon most probably depends

on some affection of the diaphragm, which is thrown into a state of contraction, and pushes the bowels downwards into the abdominal cavity. I am the more convinced that this is the true explanation, from the fact that you can sometimes make the abdominal swelling disappear for a second or two, by getting the patient to take a deep inspiration, and then suddenly breathe out again. But, whatever be the explanation, the value of anæsthesia as an adjuvant in aiding and establishing a correct diagnosis of such cases cannot be overrated.

[Before proceeding to the treatment of this disease, Dr. S. premises a few remarks as to its pathology. This is still involved in great obscurity. In the greater number of cases we find on local examination no trace of uterine or ovarian disease whatever; in some we find slight engorgement, a little displacement, or ulceration. Yet from the fact of nothing being discoverable in the other cases we must not regard these as essential causes, only as coincidences. So that, on the whole, the disease would seem to depend rather on some disturbance of the ordinary functions of the generative organs than on any organic disease. In the treatment of the affection our first anxiety must be to raise or restore the standard of health, which is generally impaired. Secondly, to counteract any existing uterine or ovarian disease; and, thirdly, to administer uterine and ovarian sedatives. In the bromide and iodide of potassium we have remedies likely to act as direct sedatives to the generative organs.]

I know that by the administration of these drugs, and particularly by the administration of the bromide of potassium, I have often succeeded in cutting short the disease, and in causing the train of symptoms to be suddenly broken down, after they had been in existence for a few months only, instead of allowing them to go on and annoy the patient till the completion of a period corresponding to the usual term of utero-gestation, or even for a greater length of time; and this striking effect of these remedies I am disposed to attribute to some specific sedative action exerted by them on the uterus and ovaries. And there are other facts known with regard to the use of these drugs, which go far to confirm the idea that they are possessed of such an action as I refer to. It is on this supposed action, for example, that Sir Charles Locock founds his recommendation of the bromide of potassium for the cure of epilepsy connected with menstruation. There is, as you are aware, a form of epilepsy which is liable to attack females, and more particularly young girls who have just reached the age of puberty, and who become subject to an attack of epilepsy immediately before, during, or after the recurrence of every menstrual period. The onset of the epileptic fits seems to be directly connected with some obscure kind of irritation set up at these periods in the organs of generation; and according to the experience of Sir C. Locock and others, this type of disease, which rarely

yields to any other mode of treatment, may sometimes be cured by the use of bromide of potassium, which probably acts by quieting the excitement of the uterus. From these, and such like observations as to the action of the bromide of potassium on the uterus, I was first led to try the effect of it in cases of spurious pregnancy; and from what I have seen of its efficacy in these cases, I can recommend you very strongly to have recourse to its administration. Give five or six grains of it three times a-day, either alone, or with the addition of from two to three grains of iodide of potassium, and I feel certain that you will often succeed in checking the progress of the morbid symptoms, and so in relieving your patient's mind of much anxiety, and in saving her much needless trouble and prolonged distress. The remedy, let me add, has this further recommendation, that it often proves a good tonic, so that its use is not contra-indicated by any constitutional debility on the part of the patient. The bromide of potassium, let me add, may also be applied locally to the uterus by having it made up in the form of a medicated pessary, and its action may then be aided or supplemented by the admixture of some other sedative, such as morphia or belladonna. Or you may employ other local sedatives. Thus I have sometimes attempted to allay uterine irritation in such cases, and more particularly where it was attended by, or amounted to, a certain degree of neuralgia, by the introduction of a stream of carbonic acid gas, or of that gas combined with the vapour of chloroform, into the vagina, in the manner I explained to you when treating of the palliative treatment of carcinoma of the cervix uteri. Sometimes, also, I have used leeches locally with a similar view. By the mere application in this way to the uterus of local sedatives you can never, perhaps, expect to produce such a powerful effect on that organ as will lead to the cure of the disease; but I believe you will often find them most useful adjuvants to the internal remedies.—*Med. Times and Gazette, Sept.* 10 *and* 17, 1859, *pp.* 250, 278.

107.—CASE OF ABORTION BETWEEN THE THIRD AND FOURTH MONTH, ENDING FATALLY FROM INTRACTABLE VOMITING AND DIARRHŒA.

By Dr. T. HERBERT BARKER, Bedford.

[The following case shows that even abortion may not be sufficient to save life in cases where the irritation produced by pregnancy has excited severe systemic disturbance.]

On August 28th, 1858, Mrs. H., aged 42, the mother of a large family, aborted in the fourth month of her pregnancy. She was not under my care at the time of the abortion, for she had left this neighbourhood to visit London. I learned, however, that a week before the abortion, she was seized with violent diarrhœa and vomiting, which continued unchecked up to the period when the fœtus was

thrown off. The abortion had been preceded and followed by considerable hemorrhage. Recovery was never fairly established, the intestinal irritation continuing all the time. Unfortunately, she determined to return home while yet suffering from the disturbance of the alimentary system and consequent depression, and was conveyed directly from her bed-room to the railway station. The last seven miles of her journey was in an open gig, and she was exposed to heavy rain.

As soon as she reached home, eight days after the abortion, I was sent for, and found her suffering purely from gastro-intestinal symptoms. She was frequently vomiting, the vomited matters consisting of the ingesta, with a considerable quantity of bile of the usual green colour. No food could be retained, and her exhaustion was extreme. But the most intractable symptom was diarrhœa. This was persistent, in spite of every treatment. The motions were as frequent as ten or twelve in the twelve hours; and the matters excreted were copious, liquid, somewhat deeply tinged and offensive, occasionally containing shreds of mucus. She complained of but little pain, except a burning sensation in the epigastrium: and occasionally, in the cardiac region, of acute darting pains, to which she had been liable for some years. There was no tenderness on pressure of the abdomen. The pulse was 112, small and feeble. The tongue was moist, slightly furred, and red at the tip. The skin was moderately warm. Thirst was excessive.

In this case I used every variety of treatment, relying chiefly on astringents. In the list of remedies given, with every care, were catechu, kino, iron in the form of tincture and the persesquinitrate, the mineral acids, and opium in every shape. Opiate suppositories, and starch and laudanum enemata, were freely used, but without avail. Food, in any form, and medicines, appeared sometimes rather to increase than to lessen the symptoms. The vomiting was distressing, and the diarrhœa profuse, as though the entire system were being drained of its fluids. The countenance became indescribably pinched and anxious. In spite of a liberal supply of brandy, carbonate of ammonia, ether, &c., she gradually sank, and died from sheer exhaustion, precisely fourteen days after the abortion.

Remarks.—In my last reported case, we saw that abortion saved the life of the patient by stopping the gastro-intestinal mischief. In this case, although abortion occurred, a fatal result ensued from the intestinal flux and the vomiting. The case, therefore, tells rather against than for the practice of producing abortion. It is nevertheless to be borne in mind, that the patient was subjected to unfavourable conditions after the delivery; that is to say, she travelled a great many miles, and was exposed to rain, while in a condition but ill fitted to bear these risks.

The second point of interest is, that medicinal measures of the astringent type—pushed to the fullest extent and with every care—proved utterly unavailing. They neither arrested the vomiting nor

checked the diarrhœa. Some of the medicines, particularly the cretaceous astringents, seemed to me to increase the mischief and to cause pain. Indeed, it has never been my lot to witness a case in which all medicinal and dietetic treatment was more tenaciously resisted.

If—as one of our judges recently intimated in his most extraordinary charge to the jury—inamenability to all treatment constitutes a ground of suspicion of foul play, here was a case for the gravest suspicion. Nothing can be weaker, more illogical, or more dangerous, than such a dogma.

This case differs slightly from the previous one in regard to symptoms. In the preceding case, the symptoms were of the dysenteric type. In the present they were, I should say, rather of the choleraic type. In both, nevertheless, shreds of membrane were thrown off. In the preceding case there was tenesmus; in this, that symptom was absent, the matters ejected being passed without effort or pain. In the preceding case, the patient made no complaint of burning pain in the stomach; in this case that symptom was a distressing one. These are the differences: they are minor in kind, but deserve attention. In one grand respect the cases are intimately allied; that is to say, the gastro-intestinal symptoms had their origin in uterine irritation, and in that alone.

There is every reason to believe that the connection between really serious and even fatal disturbance of the gastro-intestinal mucous membrane and pregnancy, is more common than has been suspected. Since my former case was forwarded to the Journal, several recorded cases have been referred to. In a letter by Drs. Richardson, Thudichum, and Webb, upon the case of Isabella Bankes, these authors show that this connection has been so frequently observed on the other side of the Atlantic, that it has led to the announcement of this subject for prize competition. This prize was awarded to Dr. David Hutchinson, for an excellent essay, in which he has brought together many valuable facts. The connection of dysentery and pregnancy has been noted by Guillemeau, Mauriceau, Shaw, Denman, Burns, and others of our early obstetric writers. In 1848, Dr. Churchill published the history of a case, which, in some points, is like the one which occurred in my practice. A case by Mr. Edmunds was fatal after the miscarriage; the diseased action had been thoroughly set up, and the dysenteric symptoms continued in spite of everything. Another fatal case has occurred in the practice of Dr. Freeman, of Plymouth. Vomiting alone, without either diarrhœa or dysentery, has proved fatal during pregnancy. Dr. Tyler Smith has met with such cases. M. Cartaya, in an essay, *Vomissements incoercibles pendant la Grossesse*, has collected fifty-eight cases, twenty-four of which proved fatal to the mother. Professor Stoltz, of Vienna, records eleven fatal cases. In 1855, a discussion took place in the Academy of Medicine in Paris, on the propriety of producing abortion in these extreme cases.

The resemblance of these cases of sympathetic gastro-intestinal mischief to irritant poisoning, has been so striking in some instances, as to have led to suspicion. In two cases, indeed, referred to by Dr. Tyler Smith and Dr. Richard Quain, the suspicion was so strong, that the ejecta were submitted to chemical examination. These facts remind me that two years ago a lady was repeatedly under my care, with severe attacks of sickness and diarrhœa, during the very earliest period of pregnancy. Several circumstances in this case rather puzzled me, and led me to suspect that the gastric symptoms were not solely the result of the pregnancy. This lady had never suffered from sickness during any previous pregnancy; it was not in the least restricted to the morning, but common at all times, but mostly after food; and whether at rest, or otherwise. The sickness was not accompanied with acidity in any shape; but it invariably preceded severe diarrhœa, as though the stomach rejected some offending material, a portion of which afterwards passed through the intestinal track, and caused mischief there. These attacks were perfectly amenable to treatment. A soothing mode of medicinal treatment, diet, and regimen, with quiet, always relieved; the attacks were, nevertheless, frequently repeated, and severe, producing considerable constitutional disturbance. Within the first four months and a half of pregnancy, this lady was under my care as many as seven times with attacks of sickness and diarrhœa of the character described above. After I had seen her through four attacks, the idea of irritant poisoning from some source or other certainly crossed my mind; and I mentioned my suspicion to the husband. We carefully examined the kitchen, but could not find anything improperly used for culinary purposes, and there our suspicions ceased. Every subsequent attack was regarded as a not common phase of sympathetic stomachic and intestinal affection, which would probably cease before long. This was the result; for, after the first half of pregnancy, she never had another attack.

With these facts before us, it behoves us to act with great caution where pregnancy is present; for there can be no doubt that now and then we meet with physiological and pathological effects, which are quite beyond the common beaten track of observation, and which can only be duly appreciated when the fact that pregnancy exists is itself known.

It has been urged by some professional men, that while these peculiar symptoms incident to pregnancy are possible, they are not common. I admit the fact; and I admit it on twenty years of active experience. But it strikes me, from the same experience, that cases of irritant poisoning are much less common; and I have sufficient confidence in my countrymen and women to believe that this view is correct. Any way, I am very happy that in my cases, I brought no one up to trial for a life; and I submit that medicine will soon be called Moloch, if many similar cases, because they resist remedies, are to be set up as illustrations of slow poisoning by felonious administration.—*Brit. Med. Journal, Oct.* 1, 1859, *p.* 793.

108.—HEMORRHAGE AFTER ABORTION.

By R. Jones, Esq., Strefford, Shrewsbury.

The perusal of Mr. Humphrey's case of Uterine Hemorrhage in the Journal for December 4th, induces me to relate briefly a very similar case, which occurred in my practice some years ago. The subject of it was the wife of a blacksmith residing near this village, over 30 years of age. She was a woman of good constitution; but the tone of her system had been considerably reduced by privation and anxiety, induced by the prolonged and serious illness of her husband. She had hardly completed the third month of utero-gestation, when she experienced a sudden fright, and abortion was the consequence. The ovum was reported to have been expelled; and nothing alarming happened till some days afterwards, when she suddenly jumped out of bed to assist her husband in an emergency. Profuse loss followed; and I found her in a fainting state, with copious gushes escaping every two or three minutes. A plug applied put a stop to this at once. For the next month or five weeks, the same recurred, in spite of all treatment suggested, including the mineral acids, metallic salts, vegetable styptics, opium, and ergot, with cold affusions and astringent vaginal injections. On many occasions, the timely use of the plug appeared to rescue her from impending dissolution: all other treatment was of no avail; and such was the fearful condition to which my patient was reduced, that I looked upon her case as all but hopeless. As a *dernier ressort*, I decided to try the effect of mercury. One grain of calomel and half a grain of opium was, therefore, given every six hours. The bowels were relieved occasionally by cold water injections, and active counter-irritation was applied to the sacrum. No serious hemorrhage happened afterwards, and my patient made a slow but perfect recovery.

I have adopted the same treatment, with the same success, in several obstinate cases of the same character since; but of late years I have placed much confidence in another remedy for such cases, and have seldom been disappointed by it. That remedy is oil of turpentine.

[There is nothing so much to be depended upon in these cases as the plug *well applied*. We have the bleeding almost at entire command; Mr. Jones found calomel and turpentine very effectual. We think well of turpentine, but in these cases gallic acid or tannin will be found even more efficacious. The turpentine cannot be continued week after week in hemorrhagic cases, but gallic acid or tannin can. You may give five or ten grains of gallic acid every few hours, or tannin two or four grains for a long time. We have continued one or the other of these medicines for weeks without any bad effects. The acetate of lead is sometimes more efficacious still, when all the other styptics have failed. Of course we assume that the fœtus and deciduous membrane or placenta have come away.—Ed. Retrospect.]—*British Med. Journal, Dec.* 18, 1858, *p.* 1047.

109.—ON THE USE OF OXALATE OF CERIUM IN THE VOMITING OF PREGNANCY.

By Dr. J. Y. Simpson, Edinburgh.

Cerium is one of those rare and little-known metals which were first discovered in the early part of the present century, and is found chiefly in the Scandinavian mines, combined in small proportions in various minerals. I believe that any of the other preparations of the metal would fulfil the indication equally as well as the oxalate, which is used simply because it is the most easily procurable salt of cerium in the market; oxalic acid being used to separate the cerium from the metal with which it is most generally combined in nature, namely, didymium. The action of cerium on the stomach seems to be that of a sedative tonic, resembling in some degree the action of the salts of silver, and bismuth; and I have seen it succeed in curing the most obstinate cases of vomiting so much oftener, and so much more speedily than any other remedy, that I have come of late to have great faith in its employment. I would not lead you to suppose that by the administration of a quantity of oxalate of cerium you will succeed in curing every case of vomiting, or even in alleviating it in every case; but I am certain that you will find the remedy successful in a larger majority of instances than you will find any other one drug. You may give one or two grains of it, three times a day or oftener, in the form of pill, or mixed with a few grains of gum tragacanth, in the form of a powder. The vomiting usually ceases after a few doses have been taken; but in some cases it does not abate till the remedy has been persevered with for several days. The effect is sometimes instantaneous. I had a patient some time ago from the west of Scotland, and when her husband first came to ask me to visit her I was engaged and could not go, but after hearing his account of the case, I gave him a prescription for cerium pills, which I desired him to administer to his wife till I could get to see her. He came back next morning, asking what the medicine was which I had given him, for the effect of it had been like magic. The vomiting, which had been going on almost incessantly, and which nothing seemed to have any power of alleviating, ceased upon the administration of two doses of the cerium. In a previous pregnancy in this patient it had been made a question for a medical consultation whether abortion should not be induced, to save her from the effects of uncontrollable sickness and vomiting. But the good result is, unfortunately, not always so immediate. One of the earliest cases in which I employed it was in the case of a lady who came from Greenock, when she was pregnant for the fourth time, and had arrived to between the third and fourth months of gestation. For these three or four months she had been always vomiting many times a day, and often during the night also; and that whether the stomach was empty or full. She could take but very little food, for she always sickened at the sight of it. It had been the same in all

her former pregnancies; and on the occasion of the first of them the vomiting was so severe as to bring on a miscarriage, and the patient's own life was despaired of. She got, first of all, one grain of oxalate of cerium, but vomited three hours afterwards. She was then told to take a grain every three hours for a day, and afterwards one grain thrice a day. This was successful in checking the vomiting, and a few days afterwards she left Edinburgh, feeling quite well, eating her meals heartily, and free from all sickness. Everything had been tried by different medical men in the west which afforded any prospect of relief, as creosote, prussic acid, bismuth, lime-water, ice, champagne, opium, blisters, &c., but all without effect. The only thing from which she ever experienced any benefit, and that was only very transient and temporary, was calcined magnesia. Yet it required only a very few doses of oxalate of cerium to produce a perfect cure. Shortly afterwards I saw with Dr. Craig, of Ratho, a case of severe and persistent vomiting in pregnancy, where he had tried everything; but in vain. She, too, was cured by a few doses of cerium. When the propriety of entering this and other modern remedies in the new Pharmacopœia to be published by the Medical Council was lately debated, it was objected that so little of the drug is used that it is not worth while classifying it among the other recognised medicinal agents. But on making inquiry lately at the drug shop of Messrs. Duncan, Flockhart, and Co., in this city, I was told that they had sold as much as sixty-four ounces during the preceding twelve months, and I feel assured that it only requires to be more widely known to make it more extensively esteemed and employed as a general metallic sedative tonic.—*Med. Times and Gazette, Sept.* 17, 1859, *p.* 280.

110.—*On the Induction of Premature Labour by Uterine Catheterisation.* By Prof. Braun.—Professor Braun, of Vienna, states that he has for several years given a preference to this mode of inducing premature labour; inasmuch as it is very certain, operates rapidly and safely, brings on the pains with gradual energy, gives rise to no ill-consequence, such as congestion or injury of the uterus, or detachment of the placenta, and is performed by the single application of a simple instrument. One disadvantage of the procedure is, that the membranes may become somewhat easily ruptured, especially in primiparæ. In order to prevent this accidental rupture, the author softens in hot water the end of a well-oiled catgut bougie, a foot long, and from two to three lines thick, and passes it along the index finger with a twisting movement into the uterine cavity, until only a portion, equal to two fingers' breadth, remains in the vagina. The bougie so passed always excites pain in from six to twenty hours, does no injury to the membranes, and is to be removed only just before the discharge of the waters, or the birth of the child. The employment of a gum catheter, having a very thin flexible stilette, is usually also attended with

good effect. Its application is difficult, however, when the vagina is narrow, and deviates from the pelvic axis. During the session 1857 and 1858, Professor Braun employed catheterisation 12 times, 11 children being born alive, and 5 dead—three being twin-births. Of the mothers 8 recovered, and four died during the puerperal process, pneumonia, tubercle, and Bright's disease, having been respectively the causes of death. The labour was terminated at an average period of twelve hours after the introduction of the catheter. Brief accounts of these twelve cases are subjoined.—*Wien Med. Wochenschrift*, 1858, No. 46.—*Med. Times and Gazette, June* 11, 1859, *p.* 606.

III.—NEW TESTS FOR THE KIESTEINE OF PREGNANCY.

By Dr. J. Braxton Hicks, Assistant Physician-Accoucheur to Guy's Hospital.

[The chief reason why the presence of kiesteine in the urine is not more frequently resorted to, as an aid to the diagnosis in doubtful cases of pregnancy, is the length of time occupied in its spontaneous separation.]

As there is no amorphous deposit thrown down from urine previously clear, within two or three days, which is not easily dissolved by heat (lithates) or by dilute acetic acid (phosphates and carbonates), excepting from that of pregnant women, it is evidently not necessary to wait till the decomposition has gone on to form the white pellicle which ensues upon protracted exposure; but if a deposit takes place varying in colour according to that of the urine (but naturally white) unchanged by the above-named tests, then we may safely conclude that the urine contains kiesteine.

This deposit varies from copious troubling to that of small flakes falling to the bottom, and probably results from the natural acid of the urine, or the formation of lactic acid in it, coagulating the newly-altered kiesteine: and the time at which the troubling takes place varies also, probably, with the rapidity with which the change by the air goes on and the condition of acidity.

If, then, we add rennet to urine of pregnancy, we shall find that in nearly every case the deposit above alluded to appears at an earlier date than if it is not employed: in some cases, within an hour (this is uncommon); in others (especially if the urine be recently passed), in from twelve to twenty-four hours. In the majority of instances, the change produced by the above-named agent has been in advance of the usual method by about half the time, and the quantity of the deposit has been decidedly greater.

Now, the greasy-looking pellicle which has always been waited for as a sure sign of kiesteine, consists of a small quantity of amorphous matter (kiesteine); occasionally a few fat-globules, but not constant; numerous crystals of the tripophosphate, amorphous carbonate, and

phosphate of lime, which incrusts the numerous so-called vibriones, thereby preventing their peculiar movements till released by the addition of acetic or other acid. All these are produced by the process of decomposition, and form therefore but a crude test, being also somewhat imitated by the decomposition of albuminous and diabetic urine.

Rennet, I have found, has no action on healthy, diabetic, albuminous, or phosphatic urine. A slight deposit sometimes takes place, looking something like mucus; but I think urine giving off but a slight precipitate should be held doubtful in respect of kiesteine.

If, after the deposit is well formed, we add to, say, half an ounce of the turbid urine (taking the lower portions) a few drops of strong solution of ammonia, and boil for a minute or two, we shall find the deposit is formed into a semi-mucous mass, so that the urine becomes almost tremulous. When this occurs, it is, I think, characteristic of kiesteine. It can be produced without boiling, but the change is slower and not so complete. If the deposit be scanty, the above appearance is not so well marked; but, by careful watching, it may be observed amongst the flakes which are formed.

This test for kiesteine can be employed equally well with or without the previous use of rennet. The quantity of phosphates thrown down by the ammonia may be known by adding gradually acetic acid, so as to slightly acidulate. What remains undissolved is the kiesteine.

In employing rennet, I find the best method is to mix about two teaspoonfuls (as described below) with about three ounces of the urine, if it be recently passed; but if it has stood some time, and the kiestine is about to be deposited, I like to pour it quietly in, so that it may fall to the bottom. The deposit is then clearly shown at the juncture of the two fluids.

Alkaline urine should be accurately neutralized by acetic acid, and should pus be present, it should be allowed to stand, and then be filtered. (However, the rennet semi-gelatinizes pus, so that it is not of very great consequence.) This plan should be adopted in all cases where the urine is turbid, from phosphates, pus, mucus, or extraneous matter.

The chief advantages of the employment of rennet are—

1st. Saving of much time.

2nd. Increase of the deposit.

3rd. The deposit is nearly free from phosphates.

4th. It is nearly free from smell.

The rennet I use is prepared in this way:—Take the fourth stomach of a calf as soon as killed, and scour it well inside and out with salt, so as to remove the curd. Let it drain a few hours. Place it in a wide-mouthed jar, and sprinkle a handful of salt upon it. In a short time the juice will exude, and dissolve the salt. Take this and filter

through bibulous paper; place it in a bottle, and use as required. That left in the jar will continue to yield a fluid for some time; otherwise some salt and a small quantity of warm water should be poured over it, and allowed to stand a day. Then filter the juice. The stomach may also be filled with salt and sewn up, or it can be stretched on a skin to dry. In the latter cases pour warm water upon it, allowing it to stand some hours, adding salt to help to preserve it. The more concentrated the juice is the better.

Rennet, already salted, may be obtained of almost any butcher.—*Lancet, Sept.* 17, 1859, *p.* 281.

112.—*Appearance of the Yearly Ripening of Ova in Woman.* By Dr. MATTEI.—Dr. Mattei regards the theory of the monthly maturation of ova concurrently with menstruation as erroneous, and believes that for each ovary only one annual ripening takes place. The months of January, February, March, and April are especially favourable for this maturation. The appearances of this condition come on at times very gently, at others very painfully. The general appearances are, alterations of the voice, sleeplessness, at times neuralgias, prostration, vomiting, frequently palpitation, cough, hoarseness, without material change in the breasts. As local symptoms, there are sensation of weight or pain in the abdomen, from the sacrum to the thighs, and especially pains in that side of the pelvis on which the lymphatic glands are swollen and tender; there is also heat and excitement of the external genitals. The menstruation is disturbed; it is seldom rendered more profuse, most frequently more scanty, coming on earlier, and attended with nausea. At times leucorrhœa, diarrhœa, dysuria, sympathetic symptoms in the breasts; the excitation of the ovarian region causes pains, nausea, even hysterical cramps; hematocele, peritonitis, and phlegmon may occur. According to the individual, these symptoms may last for four, twelve, or twenty-eight days, and disappear altogether, or pass into symptoms of pregnancy or false conception. The interval between the ripening of the ova in the two ovaries is variable. The minimum observed by the author was four days, the maximum, five months. Dr. Mattei further says that this yearly ripening mostly ceases at the same epoch as the germination of plants and the rut of animals.—*Brit. and Foreign Medico Chirurgical Review, Oct.* 1859, *p.* 553.

113.—SUGGESTIONS ON THE PATHOLOGY AND TREATMENT OF PLACENTA PRÆVIA.

By Dr. ARTHUR S. DONKIN, Newcastle-on-Tyne.

[Professor Simpson has adopted the opinion of the late Professor Hamilton in believing that the hemorrhage in placenta prævia issues from the surface of that portion of the placenta which has become

detached, and not from the orifices of the exposed uterine vessels. This hypothesis he attempts to explain on our anatomical knowledge of the vascular structure of the material portion of the placenta. But this is evidently erroneous, for, as observed by Dr. Barnes in cases where only a portion of the placenta is abnormally attached to the cervix,—on the separation of this portion from the cervix, the remainder continuing attached to the fundus, the flooding is arrested. It is in fact the contraction of the womb which secures immunity from flooding, and not the mere separation of the placenta. Dr. Barnes further asks, How is the flooding stopped from that part of the uterus bared of the placenta? and answers his own question thus: Dilatation of the mouth is owing to contraction of the longitudinal fibres of the cervix, and this contraction of the cervix arrests the hemorrhage, in the same manner as flooding after normal detachment of the placenta is stopped. Thus, the first effect is bleeding; the second to stop the bleeding. The severance of the placenta is accomplished in these partial presentations in successive arcs or zones from the os upwards, until the boundary line between normal and abnormal placental implantation is reached. This zone attained, the labour is a natural labour. Dr. Donkin says:]

With regard to these propositions, advanced by Dr. Barnes, the following queries may be put:

1st. Is dilatation of the os produced by contraction of the cervix, of whose cavity it is merely the external orifice?

2nd. Does the cervical region of the uterus contain longitudinal muscular fibres, by whose contraction it is shortened or retracted?

3rd. Is the spontaneous arrest of the hemorrhage, in *placenta prævia*, accomplished by the same process which checks that following detachment of the placenta from the fundus after natural labour, namely, contraction of the muscular coat immediately around the bleeding orifices in the early stage of labour?

4th. Does detachment of the placenta, from its prævial implantation, commence at the os uteri externum, and extend gradually upwards towards the uterine body;—or, in other words, does the severance, in central cases, proceed from the centre to the periphery of the placenta?

These queries I will endeavour to answer in the negative, in making the following observations on the anatomy and physiology of the cervix uteri.

When we attentively consider the gravid uterus *at or near the term* of utero-gestation, we are struck with the analogy it bears to the bladder, which is a hollow muscular organ, permitting its contents to accumulate until it is unable to sustain a further amount of distension, and then expelling them by a vigorous contraction of its muscular walls. The only difference being, that whereas the contents of the bladder are liquid, one single contractile effort is sufficient for their

expulsion. The contents of the uterus are, on the other hand, solid, and meet with considerable resistance in their passage; a series, therefore, of successive efforts, between each of which there is a pause, are necessary to enable the organ to empty itself. But this analogy of the *gravid uterus, at the full term, to the distended bladder, rectum, or other hollow muscular organ*, may be carried still further; for not only are its muscular fibres those of involuntary or organic life, but, like these, it is provided with a sphincter, which passively dilates or relaxes prior to and during the act of expulsion or evacuation, and immediately contracts when this has been accomplished. *This sphincter is the cervix.* The gravid uterus, then, physiologically considered, consists of two parts; the first being the body and fundus, whose office is to contract; and the second the cervix, which passively expands during the act of parturition.

"The neck of the uterus," says M. Cruveilbier, "is composed entirely of circular fibres, which intersect each other at very acute angles." This opinion is corroborated by the researches of M. Jobert, who observes that "the uterine neck is formed of fibres which constitute semicircles, and decussate without mingling; the semicircular arrangement is more evident in women who have had children than in others." According to the same author, a portion of the muscular fibres, forming the superficial longitudinal layer on the posterior surface of the body, pass into the posterior surface of the cervix. This latter assertion, however, is at variance with the opinion of Dr. Farre, whose observations show that these longitudinal fibres are entirely absent in this portion of the uterus. We are, therefore, I think, in a position to conclude, that in the *arrangement* of its muscular tissue, *the cervix differs from the body and fundus in the absence of a superficial layer of fibres having a longitudinal course or direction*, the fibres of which it is composed having a concentric arrangement in the manner of a sphincter. But this is not the only structural difference, which the scalpel and microscope have revealed, between these two portions of the uterus. For it has been ascertained that the cervix, or rather its middle coat, is composed not only of involuntary muscular fibre, but also of fibrous tissue; the two being intimately mixed together, but the quantity of the latter being so abundant that, in the opinion of Dr. Farre, "*this might, with almost as much propriety, be called the fibrous coat of the cervix.*"

M. Jobert has likewise pointed out the important fact, that while the peritoneum is firmly and closely united to the muscular substance of the body and fundus, in the cervix, on the other hand, a considerable quantity of loose cellular tissue intervenes between these two structures. "We may establish as a law," observes M. Jobert, "that the peritoneum is connected with the proper tissue of the uterus, in woman and in animals, by muscular fibres, never by cellular tissue or by yellow fibrous tissue, and that cellular tissue, in the entire animal series, is the means of union between the peritoneum and the

neck of the uterus, the vagina, and large ligaments." This lax cellular tissue, according to Dr. Farre, also intervenes between the anterior surface of the cervix and the posterior wall of the bladder, where they are in apposition, and in which locality the former is uncovered by peritoneum.

These histological facts, then, justify the conclusion, that the *mechanism* of the cervix is such as to enable it to undergo, by means of its plentiful non-muscular element, a great amount of passive dilatation or expansion during the primary stage of labour, and by means of its circularly arranged muscular structure, to contract when the uterus has emptied itself, or, in short, to perform the office of a sphincter; while its connection with the peritoneum and bladder is so loose, that its dilatation and shortening can be effected without inflicting mechanical injury on these important organs. Against this suggestion the objection will probably be advanced, that there is no definite line of demarcation between the body of the uterus and the cervix—that they become gradually blended together; but the same argument will apply with equal force against the existence of a sphincter to the bladder.

To maintain, on the other hand, in the face of the anatomical evidence which I have adduced, that dilatation of the cavity and external orifice of the cervix is produced by the muscular contraction of its walls, or that the latter contract simultaneously with each successive contraction of the body and fundus during labour, would be quite as illogical and irrational as to assume that the neck of the bladder is opened by the contraction of its sphincter, or that the latter contracts during the act of micturition. For it is well known that a muscle contracts in the *direction* of its fibres; so that, were the cervix to contract during labour, it being a circular hollow muscle, its cavity would be prevented from dilating, and it would then constitute an insurmountable obstacle to the completion of labour, and lead to grave results. Besides, no one, it may be presumed, will deny, what common sense would teach, that the cavity of a hollow organ can only be enlarged by the expansion of its walls, and not by their contraction. Now, as the cavity and orifice of the cervix *do* become enormously dilated before the pregnant uterus can be emptied, it follows, that this amplification can only be produced by expansion of its walls, and that this expansion, *during labour*, from the rapidity of its development, can only be of the passive kind, and the result of the operation of physical forces.

[In summing up his observations on the anatomy and physiology of the cervix, the author puts the following proposition:]

While the body and fundus contracts during labour, the cervix is mechanically expanded, by which process the os externum is dilated. By this passive expansion the circularly arranged fibrous and muscular tissue of the cervix is put upon the stretch, and the whole cervix

considerably shortened. I therefore hold, that it is anatomically and and physiologically impossible that "dilatation of the os is contraction of the cervix," as asserted by Dr. Barnes.

Having offered these suggestions on the anatomy and physiology of the cervix, I will now endeavour to explain the part which it plays in the pathology of *placenta prævia.*

The expansion of the cervix, from the fifth to the middle of the eighth month of pregnancy, does not in the majority of cases produce any severance of the placenta from its attachment to it; at all events, it is seldom that hemorrhage, the never-failing attendant on such a result, makes its appearance during this period. The reason may be accounted for by the fact that, up to the last-mentioned date at least, the placenta is rapidly growing. This increase or growth will enable it to keep pace with the slowly expanding cervix, and to mould itself to the altered shape of the latter. In those cases, again, where the hemorrhage does not make its appearance until labour commences, it is possible that placental growth and cervical expansion progress, *pari passu*, up to the full term. In those cases, on the other hand, where the hemorrhage occurs earlier than six weeks before the term, it may be presumed that the cervix expands more rapidly than is usual, and thus gives rise to placental detachment.

In most cases, however, of placental presentation about six weeks before the term, or later, the equilibrium is abolished between placental growth and cervical expansion, the former process being at or near the period of its completion, while the latter is progressing with greater rapidity and force. An antagonism is thus engendered, between the placenta on the one hand, and the cervix on the other, at the point where the latter is, for the time being, undergoing expansion, and a severance between the two in this locality is the result. By this separation, the tension of the cervix on the placenta is for a time relieved; but, as expansion continues, the same process is repeated again and again at certain intervals, until the term of gestation arrives and labour commences. In this manner the sudden and repeated attacks of flooding, during the latter weeks of pregnancy, are accounted for.

When labour is established in a prævial case, in which uterine action is frequent and vigorous, and the cervix soft and elastic, each succeeding contraction of the body and fundus of the uterus expands a "zone or arc" of the cervix, and, consequently, detaches a corresponding amount of placenta, until, after the return of a sufficient number of pains, the whole of it is completely peeled off from the cervix. And if the cervix expands, as I have endeavoured to show, not only before but during labour, from above downwards, it follows that the detachment of the placenta must follow the same course. *It must therefore commence at the upper portion of the cervix, and, by the agency of each succeeding uterine contraction, travel downwards.* When the placenta, then, is centrally attached, its severance will pro-

ceed from its margin towards its centre; if, on the other hand, its attachment is partial and confined to one surface of the cervix, the course of its severance will be towards its periphery. This opinion, though in opposition to the authority of Dr. Barnes and others, is in accordance with that of Dr. Ramsbotham, who, in explaining the cause of unavoidable hemorrhage prior to labour observes, that "when five months are completed, or about that period, expansion commences; and this unfolding or developing of the fibres must necessarily produce a separation of the placenta from its previous attachment to the *upper part* of the cervix."

It may with confidence be asserted, with regard to the hemorrhage which unavoidably results from the detachment of the placenta from the cervix, that the accumulated experience of the profession has demonstrated two very important pathological facts. The *first* is, that in general the hemorrhage entirely ceases, or very considerably diminished, in the interval between each contraction of the uterus, and breaks out afresh with every returning pain. The *second* is, that as soon as the placenta is spontaneously and entirely detached from the cervix, whether its attachment there was partial or complete, the hemorrhage is permanently arrested, and if the mother survive up to this period, the labour progresses and terminates without a return of the flooding. The doctrines of Professor Simpson and Dr. Barnes on these peculiarities of the hemorrhage I have already analysed, and will now venture to advance my own opinions on the subject, which are based on the views I have already expressed on the anatomy and physiology of the cervix. These opinions, for the sake of brevity, I will place in the form of propositions, as follows:

Proposition I.—Each vigorous contraction of the uterine body and fundus mechanically expands a portion or "arc" of the cervix; the expansion of this portion severs the placenta from its surface; hemorrhage is the immediate result, *principally from the vascular orifices, both venous and arterial, opened on the surface of the cervix*, and partly also from the orifices on the placenta. The further progress, or *ulterior stage*, of this *passive expansion*, closes the bleeding orifices on the cervix by the *mechanical compression* exerted by its stretched fibres on the outer surfaces of the utero-placental vessels, while coagulation arrests the feeble flow of blood from the placental orifices. Thus, by the time the body and fundus have ceased to contract, the bleeding is entirely arrested or greatly mitigated. The same process is repeated again and again, by every succeeding pain, until the whole cervix is freed from the placenta, when its repetition can no longer take place. This is the mechanism by which nature arrests or mitigates the hemorrhage after each pain.

Proposition II.—Flooding, after spontaneous and complete separation of the placenta from the cervix, is permanently arrested, not merely because the process of detachment is complete, but also because, when this period arrives, the cervix is expanded and shortened to

such an extent, that the *utero-placental vessels* passing through its substance are flattened and rendered impervious by the pressure of its stretched tissue.

Proposition III.—Immediately after the uterus has emptied itself of its contents, the cervix changes its condition of mechanical expansion for a state of rigid contraction. This latter condition prevents hemorrhage in prævial cases after delivery, in the same manner as contraction of the fundus prevents it after the separation of the placenta in ordinary labour.

The *modus operandi* of mechanical expansion of the cervix, in compressing the utero-placental vessels, as assumed in the first two propositions, may be illustrated in the following very simple manner. If we take a short tube, or a broad ring or "hoop," the walls of which are composed of threads or fibres of elastic india-rubber, intimately interwoven with each other in a somewhat circular direction; suppose this short tube has the meshes in its walls also permeated by numerous circular canals opening on its inner surface, and having flexible walls of their own; and suppose the diameter of the cavity of this tube to be an inch, if we forcibly expand it in a circular manner, until its cavity attains a diameter of four or five inches, we shall then find, that the stretching its walls have undergone will have *squeezed* and compressed these flexible canals and closed their orifices; in other words, their cavities will have become flattened and obliterated by the mechanical pressure to which they have been subjected. Now, I hold that by this species of mechanism, which is exceedingly simple and easily understood, nature arrests the hemorrhage in placenta prævia. For I contend, it cannot be shown that expansion and stretching of the cervix will not have the effect I have described on the large utero-placental vessels passing through its substance, *to such a degree as to completely arrest the passage of blood through them, or to such an extent as to enable coagulation to produce that effect.* I therefore contend that the hemorrhage is not arrested, as is maintained by Dr. Barnes and Dr. Tyler Smith, by the "*same process which arrests the flooding after normal detachment of the placenta from its normal seat at the fundus*," namely, by "*contraction of the uterine tissue at the seat of separation*:" *First*, because I deny that the cervix *contracts during the first stage of labour*; and, *secondly*, because, if this theory were correct, the hemorrhage would have an opposite character; it would, like ordinary uterine hemorrhage, occur in the intervals of muscular relaxation, and cease with the return of every period of uterine contraction.

If the explanation I have now given be correct, we are rationally led to conclude that the more fully and freely the cervix expands during each contraction of the fundus and body, and the shorter the period required to enable it to throw off the placenta, the less will be the danger to life; for not only will the flooding cease more completely after each pain, but the sooner will the period arrive

when it is permanently arrested. And as the conditions under which the cervix expands during the first stage of labour are, *first*, a soft, elastic, and fully developed condition of the cervix itself, and *secondly*, vigorous and frequent uterine action, we ought to find the *co-existence* of these two conditions, in any given case, the most favourable to the preservation of life. This conclusion is fully verified by an appeal to the records of experience. If, for, example, we refer to Table II. of the elaborate statistics of Dr. Trask, we shall find that in 29 cases of spontaneous expulsion of the placenta before the child (these being the whole number collected from all sources up to that period, in which the result to the mother is known), the attendant hemorrhage was not fatal in a single case. In these cases uterine action was vigorous, and from the result we may safely infer that the cervix was soft and elastic. On the other hand, experience verifies the supposition, that the most dangerous cases of placenta prævia are those in which, when labour commences, the cervix is undeveloped or rigid, and uterine contraction feeble and inefficient. Whether these conditions exist singly or combined, the first stage of labour will progress tardily, and the hemorrhage will be apt to prove fatal; because each succeeding contraction of the uterine fundus and body will be just sufficient to loosen or dislodge a portion of the placenta, without producing a sufficient amount of expansion in the cervix, at the seat of separation, to close mechanically the mouths of utero-placental vessels which have been opened on its inner surface. The hemorrhage will, therefore, be more continuous in the interval between pains; and, extending over a lengthened period, fatal syncope will be most likely to supervene, before the cervix can be sufficiently expanded to withdraw itself from the placenta and to arrest the flooding.

In concluding these observations on the pathology of placental presentation, I will venture a few additional remarks as to their bearing on the question of *treatment*.

Either *pathologically* or therapeutically considered, almost all cases of placenta prævia might with propriety be grouped into two distinct classes, as follows:—

Class I. Cases in which, at the commencement of labour, the cervix is fully developed (*i. e.*, has completed its first stage of expansion), soft, and elastic, and in which uterine action is present and efficient.

Class II. Cases in which, in the early stage of labour, the cervix is undeveloped, rigid, or unyielding, and in which uterine action is feeble and inefficient.

In the first class of cases, either *temporising measures* to assist nature, or the operation of *turning*, will be the necessary course of treatment. The *modus operandi* of turning in such cases has been philosophically described by Dr. Rigby. "When the os uteri," he observes, "is sufficiently dilated to admit the hand, there will not be much to fear of the patient losing much blood during the turning,

for during the first part of the operation, the hand and arm act as a compress and plug; and afterwards, when the body of the child is advancing, this will act in a similar manner. There is little danger of the hemorrhage coming on after the child is delivered, for the contraction of that part of the uterus, to which the placenta has been attached, is much greater in these cases, than it is when the placenta is situated in the upper part of the uterus under ordinary circumstances." In short, the operation itself mechanically expands the elastic cervix, and compresses the surfaces of the utero-placental vessels as well as their mouths, while, by emptying the uterus, it permits *post-partum* contraction of the cervix to take the place of expansion.

The second class of cases are, on the other hand, exactly those in which the condition of the cervix is such as would, under *ordinary circumstances*, render the performance of *podalic version* exceedingly dangerous, and a violation of the important rule entirely precluding its employment as an obstetric operation, and in which *extraordinary or special conditions* render the operation still more hazardous. The fearfully fatal result of the operation in such cases, has been too clearly and convincingly demonstrated already, especially by Professor Simpson and Dr. Barnes, to require further illustration or argument to prove its impropriety.

But in this class of cases the flooding is generally so profuse, that some method of treatment is absolutely required to mitigate or arrest it, to prevent the supervention of fatal syncope. To meet the urgency of these cases, *forcible detachment of the placenta by the finger*, either *completely*, as practised by Professor Simpson, or *only from its attachment to the cervix*, as advocated by Dr. Barnes, is recommended for our adoption; the latter method being merely a modification of the former.

From the propositions I have already advanced on the pathology of the subject, it will be observed that those cases in which the placenta is detached and the hemorrhage arrested by nature's spontaneous effort, *the separation of the placenta and the arrest of the flooding do not stand in the relation of cause and effect, but as the concomitant result of cervical expansion; both progressing pari passu. Nature then does not separate the placenta completely from the cervix, until the very period arrives when she has completed the mechanical closure of the mouths of the utero-placental vessels, which have been opened in the process.* The *forcible detachment* of the placenta by the finger, *to any extent*, is, therefore, *incorrect in principle*, inasmuch as it merely tears off the placenta, without making any provision for arresting the hemorrhage, which flows from the vascular orifices opened on the cervix by the operation.

The practical objections to which artificial detachment of the placenta is liable, as proved by experience, are the following: *First*, the gross mortality in those cases in which it has been employed is

equivalent to 1 in 4 6-10ths; while the gross mortality in cases of spontaneous expulsion of the placenta is only 1 in 14½. *Secondly*, that although introduced into practice for the ostensible purpose of preventing the necessity of turning in a certain class of cases, we find that exactly *one-half* of the cases treated by this method subsequently required the operation of turning in addition. Notwithstanding these objections, the fact must not be ignored, that in a considerable number of cases a cessation of the hemorrhage has followed this practice,—a result which appears in many instances to have saved the life of the mother. But as the operation is attended and immediately followed by a profuse flow of blood, this, by suddenly and powerfully depressing the heart's action, will permit the process of coagulation to take place in the bleeding mouths of the vessels. In this manner we may account for the subsequent arrest of the flooding; for we know that a sudden and copious gush of blood, by its salutary influence in producing early and temporary prostration or collapse, and thereby enabling coagula to form, is considerably less dangerous to life than a small and continuous stream of blood, which seldom acts on the circulation until it does so with a force which is at once irretrievably fatal. Thus, in 31 of the recorded cases, or about one-half of the entire number treated by this method, it is expressly stated that the detachment of the placenta was resorted to under the condition of extreme exhaustion. Now in these cases the already existing prostration of the circulation was unquestionably such as would enable coagulation to plug up the open mouths of the utero-placental vessels, and thereby prevent further bleeding. In other cases, again, it would seem that the operation was performed at the period when nature would have detached the organ; so that in these cases the arrest of the flooding can be accounted for by the change which the cervix had already undergone.

So far, then, as our statistical knowledge will enable us to judge of the value of this method of treating *placenta prævia*, it would appear not to have been attended with the success which was anticipated on its first introduction into practice; consequently, we are justified in attempting to devise some other means of arresting the flooding in the early stage of labour, in those cases whose characters rank them in the second class already defined. If we desire any method of treatment to be successful in these hazardous cases, we ought to endeavour to base it on a correct appreciation of the process which nature brings into operation to arrest the hemorrhage. If, therefore, it is correct, as I have endeavoured to prove, that the process in question is *expansion of the cervix*, we ought to assist her in effecting it, when her own powers are inadequate for the purpose.

It is from these considerations that, in the cases alluded to, in which something must always be done not only to check the flooding but to advance the labour, that I would venture to suggest *mechanical expansion of the cervix, by means of a sponge tent specially*

constructed for the purpose, as a method of treatment. From the operation of this procedure the following results may reasonably be expected:—

1. It would gradually throw off the placenta, and by putting the fibrous structure of the cervix on the stretch, it would compress the utero-placental vessels. In other words, it would, by its action on the cervix, detach the placenta and arrest the hemorrhage *pari passu*.

2. It would act both as a plug and as a powerful compress applied to the opened mouths of the utero-placental vessels.

3. It would excite uterine action.

In order to produce these important effects, the *sponge tent* employed would require to be rounded at its upper extremity to prevent its introduction injuring the placenta; it would require to be of large size, and so constructed as to expand rapidly under the influence of tepid injections.

To this method of treatment might be added the administration of ergot, or the application of galvanism, as recommended by Dr. Mackenzie of London, according to the peculiarities of each individual case. And although I have not as yet possessed an opportunity of testing its utility, I have ventured to suggest it as a legitimate conclusion based on the anatomical, physiological, and pathological reasoning which I have already adduced, leaving further details for a future opportunity, when it shall have been put to the test.

[We pay the greatest attention to the opinions of such men as Dr. Simpson and Dr. Barnes, and this paper of Dr. Donkin is an excellent one, but none of these opinions hitherto have induced us to alter our old practice which is exceedingly simple, easy, and efficacious. When we are called to a case of placental presentation with flooding, we simply *plug* the os uteri and vagina completely, so that flooding cannot possibly occur, removing the plug occasionally to examine the state of things. As soon as the os is dilated, or dilatable, we turn the child and deliver. Little blood need be lost, and the operation is perfectly easy when done early. As soon as the child is turned hemorrhage ceases. Out of numerous cases we have very seldom met with any adverse event.—Ed. Retrospect.]—*Edinburgh Medical Journal, April* 1859, *p.* 883.

114.—PLACENTA PRÆVIA.—AIR-PESSARY USED TO PLUG AND DILATE THE OS UTERI.

By J. Jardine Murray, Esq., lately Resident-Surgeon in the Royal Infirmary, and formerly House-Surgeon in the Royal Maternity Hospital at Edinburgh.

[The patient, aged 29, was in the seventh month of the eighth pregnancy, and for nine weeks had suffered from hemorrhage more or less severe. Labour-pains had set in, accompanied by great loss of blood;

and the vagina had been plugged by Mr. Pickard, of Brighton, the usual medical attendant, who requested the writer to see the case.]

When I first saw the patient on the evening of April 16, the skin was cold, the pulse weak and rapid, and the lips extremely blanched. Labour pains were recurring at regular intervals of ten or fifteen minutes, each pain accompanied by hemorrhage. On examination, the os uteri was found to be little more than the size of a shilling, its margins thick and firm. The tip of the finger encountered the spongy placental substance overlying the patulous os. Sweeping the finger round the external surface of the placenta, I broke down its uterine adhesions within an inch and a-half of the margin of the os uteri; and, detecting the membranes towards the right side, I at the same time evacuated the liquor amnii. During an hour there was very little bleeding; but at the expiration of this period, another gush of blood accompanied a pain. On examination, it was found that the os uteri was still insufficiently dilated to admit two fingers. Alarming syncope occurred; and though the patient was plied with diffusible stimulants, she did not rally for some minutes. It was evident that her only safety lay in speedy delivery. With the double object of controlling the hemorrhage and dilating the os uteri, I now introduced a flattened caoutchouc air-pessary between the wall of the uterus and the presenting surface of the placenta; and, retaining the pessary in its place by the tip of the finger, I cautiously inflated it by means of the attached syringe. A portion of the surface of the expanded pessary could be felt closely opposed to the margin of the os uteri. During thirty minutes no bleeding ensued. Then the pains became more powerful, and blood began to trickle over the thigh of the patient, who lay on her left side. More air was pumped into the pessary, and with its increased dilatation all hemorrhage ceased. From time to time we had demonstration of the value of the air-pessary as a plug; for whenever the trickling of blood recurred, it was effectually checked by further dilatation of the pessary by a few strokes of the syringe. About two hours after the first introduction of the pessary, the os uteri was ascertained to be nearly the size of the rim of a wineglass; and the air was permitted to escape from the now considerably inflated pessary, which then quickly collapsed, and was withdrawn. During a gush of hemorrhage which ensued, the hand was introduced, and the shoulder being found to present, the feet were seized, and the fœtus extracted. The placenta was immediately detached and removed, and the uterus became firmly contracted.

From its unusually large size the placenta must have extended over the greater portion of the internal surface of the uterus. Over the edges of a portion of the uterine surface of the placenta there was a thin indurated crescentic layer of decolorised coagulum, four inches in length. This coagulum had probably been formed after the first onsets of hemorrhage, nine weeks previous to delivery.

The lochia were somewhat more copious than usual; but the patient recovered without a bad symptom.

Remarks.—From the exsanguine and occasionally pulseless condition of our patient, this case was one of much anxiety. The midwife in attendance did not solicit medical assistance till the patient had already lost much blood, which may be partly explained by the fact that she had been delivered prematurely on three previous occasions. That the hemorrhage did not cease after puncture of the membranes may have been due to the transverse presentation of the fœtus. It seems well established by the lamentable results of numerous cases on record that in placenta prævia forcible dilatation of the rigid os uteri by the hand is extremely dangerous,—probably from the risk of lacerating the dilated uterine vessels at the site of placental attachment. The gentle and uniformly applied expansive force which the air-pessary is fitted to exert differs widely from forcible dilatation by the introduction of the fingers or hand. But I should doubt the propriety of applying even the equable dilating force of an air-pessary to a rigid, unyielding os uteri in a case of placenta prævia. In the case now under consideration the os uteri, though thick and firm, had not the rigid unyielding character sometimes met with even after profuse loss of blood; and the application of the air-pessary was so simple and effective that I venture to hope that in similar cases its employment may be followed by the most beneficial results. While the inflated caoutchouc bag acted admirably as a direct plug and dilator of the os uteri, and also as a powerful stimulus to reflex action, it may possibly have been of service in further separating the placenta from the uterine walls.

It is possible that the use of the vaginal plug might have been equally effectual in saving our patient's life.

Now, in cases of uterine hemorrhage in which direct plugging and dilatation of the os uteri may be deemed improper, I believe the inflatable caoutchouc bag used as a vaginal plug will be found to possess advantages over the tampon of sponge, cotton, or tow; for,—

1. The material of the caoutchouc bag does not absorb; and it therefore acts more immediately and more efficiently in arresting hemorrhage than such substances as sponge, linen, cotton, or tow.

2. When uninflated the bag is small in bulk, and its introduction is therefore easy and painless.

3. When inflated to the requisite extent, it adapts itself to the surface with which it is brought into contact.

4. Whenever it is desirable to ascertain the condition of the os uteri, the air may be permitted to escape from the inflated bag, which then quickly collapses, and is readily withdrawn without pain to the patient.

The caoutchouc air-pessaries, which are made of various strength, shape, and size, were invented by M. Gariel, who, however, advocated their use only in the treatment of displacements of the uterus. I

believe that to Dr. Keiller, of Edinburgh, we are indebted for extending their application to the dilatation of the passages in primiparæ, and in the induction of premature labour.

The case which forms the subject of this paper appears to be the first in which the air-pessary has been used in the double capacity of plug and dilator of the os uteri.—*Med. Times and Gazette, June* 11, 1859, *p.* 596.

115.—ON SOME RECENT CASES ILLUSTRATING THE PHYSIOLOGY AND TREATMENT OF PLACENTA PRÆVIA.

By Dr. Robert Barnes.

In a paper read before the Obstetrical Society of London, the author submitted fourteen cases which had come under his own care since the publication of his work on the subject; and appended two series of propositions—the one physiological, the other therapeutical—which appeared to be either proved or illustrated by those cases.

Amongst the physiological propositions were the following: That in many cases of placental presentation, there arrives a stage when the hemorrhage is spontaneously arrested. That this physiological arrest is not owing to pressure upon the bared surface of the uterus by the bag of liquor amnii, or the child; nor to death of the child; nor to syncope; nor to total detachment of the placenta. That this physiological arrest of the hemorrhage is observed when that part of the placenta which had been implanted within the cervical or lower zone of the uterus has been all detached, contraction of the uterus attending. That, this stage reached, there is no physiological or pathological reason why further detachment of placenta seated within the middle and fundal zones should occur until after the expulsion of the child, when—and not till then—the remainder of the placenta is cast off as in normal labour. That the position of the greater portion of the placenta to the posterior wall of the uterus in these cases, where it forms, by resting on the projecting promontory of the sacrum, a solid inclined plane, directed forwards, is a frequent cause of the transverse presentations which are apt to complicate placenta prævia. That in the great majority of cases where an edge of the placenta comes down to the os internum uteri, the umbilical cord springs from this edge, and thus is ready to fall through into the vagina, should the os not be occluded by the child's head.

Amongst the therapeutical propositions were the following: That owing to the high vascularity and development of the lower segment of the uterus, resulting from this part being the seat of the placenta, uterine inflammation and puerperal fever are exceedingly likely to ensue from the pressure and contusion attending the passage of the child. That this danger is much increased by the forcible introduction of the hand for the purpose of turning and extracting the child

before the os uteri has expanded. That in some cases, where it is observed that the placenta has been separated spontaneously from the lower segment of the uterus, the os being expanded to the size of a crown-piece, and the hemorrhage having ceased, it is not necessary to interfere with a labour now become natural *quoad* placental attachment. That since the os internum uteri *must* expand to the diameter of the child's head, and since, during the dilatation, placenta adhering to the lower segment is liable to successive detachment, causing hemorrhages, it is an indication to expedite this stage of the labour as much as possible. That in some cases the ordinary means of inducing contraction—such as rupturing the membranes, plugging the cervix, ergot or galvanism—will suffice to cause the rapid and safe expansion of the os. That the adhesion of placenta to the lower zone of the uterus impedes the regular progress of labour, and delays the equable expansion of the os uteri. That in those critical cases where forced delivery or the artificial total detachment of the placenta are dangerous or impracticable operations, the introduction of the index finger through the os, and the separation of the part of the placenta adhering to the cervical zone, is a safe and feasible operation. —*Lancet, April* 16, 1859, *p.* 392.

116.—ON THE TREATMENT OF PHLEGMASIA DOLENS.

By Dr. J. Y. Simpson, Professor of Medicine and Midwifery in the University of Edinburgh.

[Before proceeding to the treatment, the author goes at some length into the pathology of the disease. His views may be stated to be as follows:—That the disease cannot justly be considered as merely and simply the result of the obstruction of the principal vein of the affected limb, by the occurrence of acute inflammatory exudation on the free surface of the lining membrane of that vein. If a portion of vein be isolated by ligatures, and the included portion emptied of blood, irritants entirely fail in causing inflammatory effusion from the serous membrane of the vessel. We have cases of phlegmasia dolens without obstruction of the pelvic or crural veins, and we have the latter without the former. The proximate cause of the suffering in cases of phlegmasia dolens seems to be the over-distension of the coats of the smaller vessels by the contained consolidated blood. The pathological origin of phlegmasia dolens is a vitiated or toxæmic state of the blood, and is always preceded by morbid states, more or less vitiating and altering the constitution of the circulating fluid. In the lower animals a diseased state very exactly resembling phlegmasia dolens, may be induced by throwing a solution of lactic acid into their blood. The disease occasionally, though rarely, occurs in the upper extremities, generally in the lower, owing to their circulation being more languid, the pelvic veins being much dilated

during pregnancy. It generally occurs in the left leg, owing to its vein being longer, and more or less pressed upon by the right common iliac artery. Dr. Simpson then continues, that the indications for the treatment of phlegmasia dolens resolve themselves into the two categories of]

1st, General; and 2ndly, Local remedies; and in following out both classes of indications you will find that there are three principal rules to be attended to. Among the

A. General Indications,

1st. *Depuration of the Blood* holds the first rank. The importance of this indication must be at once admitted, if you have been convinced of the correctness of Dr. Mackenzie's observations and the truthfulness of his deductions. If there be abnormal and deleterious matters present in the blood, which have a peculiar action on the veins tending to the coagulation in them of the circulating fluid, then it is clearly a matter of prime importance to get rid of these morbid substances at once, so as to prevent the occurrence of coagulation altogether; or, at least, to arrest and check the process when once it is begun. From this point of view this means of treatment must be regarded as being almost as much prophylactic as curative in its nature. Trye tells us, that he never lost a patient out of those whom he had seen with this disease; and this success he deemed to be due to the practice which he always adopted of administering an emetic as the first part of the treatment of every case. The shock produced by the emetic has a powerful effect in checking the progress of the malady; but probably the chief virtue of the remedy lies in its action as a most efficient depurant of the blood. At the outset I believe there is no better means of arresting the disease than by the administration of an efficient and gentle emetic of any kind, provided the state of the patient does not forbid its administration, and especially in cases where exposure to cold has acted as the exciting cause. But if that fails, or is contraindicated by the debilitated condition of the patient, then we must try to purge and purify the blood by exciting the various organs of elimination to increased activity by means of their appropriate stimulants. Hence the value of the various diuretics, diaphoretics, and purgatives in the early stage of the disease. Many practitioners are in the habit of giving for the first day or two of the attack a mercurial purgative combined with ipecacuanha or antimony, using in this way both the intestinal and cutaneous surfaces as eliminatory excreting organs. But these, or any analogous therapeutic means, must not be pushed so far as to produce any very debilitating effects. Small and repeated doses of alkaline salts given in such quantities as to act upon the kidney, and, if necessary, also on the skin and bowels, are perhaps, as the general rule, both more safe and more efficient—as bicarbonate, acetate, nitrate or tartrate of

potass; conjoined, when required, with wine of ipecacuanha or antimony, or with some aperient tincture. Besides these, salts of potass, the analogous diuretic and aperient salts of soda, are generally held to have the effect of impeding, preventing, or arresting any morbid tendency in the blood to coagulate spontaneously, and of tending powerfully to the dissolution of these coagula when once they have taken place. In one patient chlorate of potass was used, and in addition tincture of the muriate of iron was employed, both as a renal depurant and as a tonic.

2nd. *The Use of Antiphlogistics and Febrifuges.*—General antiphlogistic measures are by many practitioners held to be indicated in the first stage of phlegmasia dolens when the pulse is high and strong, and the general symptoms of fever prevail. But if employed at all, they should, I believe, be rarely or never employed to any heroic degree. Formerly phlegmasia dolens was regarded as an affection which very seldom indeed proved fatal; and the strongest antiphlogistic measures employed by the authors who have reported it as such were little or nothing more than local blisters at the groin; or these preceded by moderate local leeching. Perhaps when the history of phlegmasia dolens is fully written, it will be found that the danger and mortality attendant upon the disease have been increased since venesection and other heroic antiphlogistic measures were resorted to in its management, under the idea that it was purely and radically an intense local inflammation of the lining membrane of the large veins of the affected limbs. In almost all cases of phlegmasia dolens, you will find the pulse much quicker, and more or less marked symptoms of fever present. But the best febrifuges which you can use are the depurants of which I have already spoken; and usually the time soon comes when you must, in preference, have recourse to,

3rd. *The Administration of Tonics and Stimulants.*—As the disease frequently runs a tedious course, and is often asthenic in character from its first beginning, the use of this class of remedies is indicated in most cases from an early period, and their use generally requires to be assiduously persevered in. It takes a long time to undo the effects of the changes in the nutrition of the limb consequent on the occlusion of so many of its blood-vessels, and while the process of absorption is going on and the tissues are gradually becoming restored to their normal condition, it is necessary to keep up the patient's strength by the judicious administration of tonics and stimulants, in addition to proper food. It matters little, in most cases, what special remedies of this class you employ; but wine, and the preparations of iron and quinine are the constitutional remedies which you will find to be most frequently had recourse to in the second stage of phlegmasia dolens.

B. The Local Indications

may likewise be classified under three divisions, viz.:

1st. *The Use of Local Antiphlogistics.*—Means must be adopted

to subdue the inflammation which is set up in the veins, whether this arise primarily from injury or disease of their walls, or secondarily from changes resulting from the primary distension and subsequent softening process that occurs in the occluding thrombus. The patient usually complains of much pain and tenderness on pressure along the course of the filled and cord-like iliac and femoral vein, and under the idea that the disease was fundamentally and primarily inflammation of the femoral veins, most practitioners have been in the habit of ordering one or two dozen leeches along the inside of the affected thigh; and after the bleeding consequent on the application of the leeches had ceased, the use of a series of blisters was strongly recommended by some of the older authors. What formerly I have usually done was to apply leeches at the outset, and afterwards to paint the tract of the femoral vessels all over with tincture of iodine. Latterly, I have seen several cases where little, or indeed no active local antiphlogistic measures of this kind were adopted; and I believe these cases have progressed as well, or indeed better, than where I followed the usual plan of local leeching and blistering. Perhaps these antiphlogistic measures ought to be reserved for cases where secondary inflammation comes on in the walls of the veins, as a result of the distension and irritation of these walls by the contained and disintegrating plugs or columns of consolidated blood. Then, to relieve the pain, you will require often in this disease to employ opiates internally and freely; and you must have recourse, further, to the use of fomentations. One of the best and most soothing measures that you can adopt for this purpose is to wrap the limb in a wet towel or in a sheet of dry cotton-wadding, carefully and completely covered with oil-cloth to prevent the escape of the insensible perspiration. I believe you will find an application of this kind to be the best of all poultices; an ordinary poultice—say, of bread and milk—although at first several degrees warmer than the part to which it is applied, falls to the same temperature in a very short space of time, and then its continued soothing effect seems to depend entirely on its power of keeping in the insensible perspiration. But such also, as I have said, is precisely the *modus operandi* of the wadding enveloped in oil-cloth; and this application has one advantage over the poultice, that while the latter requires to be very frequenrly renewed, the former may be left unchanged for an almost unlimited period. I am seeing just now, with Dr. Moir, a lady suffering from a very smart attack of phlegmasia dolens, coming on after delivery, who has derived the greatest relief and comfort from the use of cotton-wadding rolled all round the limb, and completely surrounded by a covering of oil-skin cloth. In this case the wadding has been taken off every twenty-four hours, and a fresh piece applied. If the pain of the limb is very severe, apply sedative liniments and applications, with or without the fomentations, or in a permeable covering. As local sedative liniments, you may use

equal parts of olive oil and laudanum; or two parts of olive oil and one of chloroform; or the common opiate liniment of the pharmacopœia. With all this the limb must be kept at perfect rest. The limb itself is usually very much paralysed, and motion in it is almost impossible; but the patient must be enjoined to keep perfectly quiet, and to abstain, as much as possible, from moving any part of the body. There is another local measure of the highest moment, and one you must not overlook, viz.—position. The proper position is elevation of the limb, which frequently gives great relief from pain, and always favours at the same time the process of resorption. In truth, position is one of the most powerful means in the treatment of many diseases. Attention to this point is frequently of more importance, and affords more satisfactory results, than the use of any kind or quantity of drugs. It is usually attempted to secure elevation of the limb by placing it upon a pillow, but this means is not always very satisfactory, as the limb readily rolls off whenever the bed comes by any chance to be moved or shaken. A better way is to raise all the lower half of the mattress, by placing something underneath, so as to make the limb lie on a sort of inclined plane, and in a position from which it cannot too readily be moved. Elevation of the limb in this manner not only tends to afford the patient the most effectual relief from her suffering—it is also of most essential importance in aiding us to carry out another local indication for treatment, that, viz., according to which we endeavour,

2nd. *To Promote Absorption.*—After the inflammatory stage has fairly passed over, it behoves us to try to bring about a reduction in the size of the limb by stimulating and promoting the process of resorption, so as to bring back the limb to its normal state. By careful and constant elevation of the limb, as we have just seen, much may be done to favour the absorption of the effused matters; but its effect may be greatly aided and increased by the firm support afforded by a flannel bandage applied pretty tightly from the toes upwards. Frequent frictions, the use of stimulating liniments, and the occasional application of a small fly blister to the groin, are also important adjuvants in the fulfilment of this indication. Dr. Dewees, Dr. Meigs, and other American practitioners, strongly recommend, indeed, the free and repeated use of friction of the limb, with sedative liniments even in the earlier and most acute stage of the malady, and totally envelope the extremity, in the intervals between the frictions, in flannels wrung out of a hot mixture of equal parts of vinegar and water. When the swelling has been reduced you require,

3rd. *To Endeavour to Restore the Power of the Limb.*—The limb may remain weak and almost powerless for some months, or even for a year or two, or for life. To restore it to its proper power, you will be obliged to have recourse to such local tonics, if I may so call them, as frictions, bandages, and the use of warm douches, which must all be

persevered with for a lengthened period. Sea-bathing, and all means calculated to restore and invigorate the general health, will also have a beneficial action on the weak extremity. Local stimulants, such as galvanism, may be applied to the limb itself; but its power will never be completely restored until the patient has begun to use it, and accustom it to frequent exercise.—*Med. Times and Gazette, June* 18, 1859, *p.* 620.

117.—ON THE PATHOLOGICAL ANATOMY OF PELVIC CELLULITIS.

By Dr. J. Y. Simpson, Professor of Medicine and Midwifery in the University of Edinburgh.

The disease consists essentially and primarily of inflammation of the cellular tissue of the pelvis; and to understand aright its nature and its course, and to be able to construct a proper plan of diagnosis and treatment, we must study,

1. *The Seat of the Inflammation.*—The pelvis, as you know, is lined and closed in inferiorly by means of a fascia, which gives off sheaths to the different pelvic muscles, and furnishes processes for the protection, support, and separation of the various pelvic organs. Wherever two layers of this fascia approach each other after covering the opposite surfaces of any organ or muscle, and wherever two layers covering contiguous organs come to be in opposition, you will find that there is always a greater or less quantity of loose cellular tissue interposed between them. Thus between the layers of the broad ligaments, between the vagina and the rectum, between the iliac muscle and the bone, and in short, in almost every part of the pelvis, there is an abundance—a great abundance—of cellular tissue; and, I repeat, the disease of which I have now to speak consists of inflammation, acute or subacute, of this abounding cellular tissue.

2. *The Products and Terminations of this Inflammation* vary according to the stage of the disease, and may be considered under the four following divisions:—

1st. Serum;
2nd. Pus;
3rd. Coagulable Lymph;
4th. Sloughing of the Cellular Tissue.

1st. *Effusion of Serum* is the first phenomenon that occurs when inflammation has become established in the cellular tissue of the pelvis. The necessary result of the effusion of this fluid is a swelling in the part, which may be felt on examination through the vagina or rectum, or even through the abdominal parietes, according to its special seat. This swelling is of greater or less extent according to the intensity of the inflammation, and according to the freedom with which the fluid is allowed to escape along the cellular tissue, and to pass

from one loculament or division of pelvic fascia to another. The swelling or tumour produced by the effused serum is from the first firm, dense, and resistant to the feel, and sometimes becomes very hard, particularly when the effusion takes place between two layers of the fascia which are not loose, and mobile, and yielding, but are bound at their margins to some osseous ridge or strong ligamentous band; as when it occurs, for example, in the wall of the pelvis, externally to the margin of the broad ligament of the uterus. In such a situation the swelling comes sometimes to feel hard as a cricket-ball, or a "deal board," as Dr. Doherty has expressed it, and has been, and might easily be, as far as mere hardness is concerned, mistaken for an exostosis of the ilium; and when in the roof of the vagina it sometimes feels as firm to the touch as a scirrhous growth. One other common and very characteristic feature of the tumour is this—it feels as if it were *affixed* to and grew, as it were, from the side of the pelvic bones, whenever the effusion has extended to a sufficient extent laterally, so as to reach the walls of the pelvis. Fibroid tumours of the uterus ovarian tumours, and others with which the "inflammatory tumour, of pelvic cellulitis are sometimes confounded, do not present this symptom. After the effusion has invaded loculament after loculament of the pelvic fascia it soon loses its primary round or oblong form. In examining the swelling day after day you can sometimes find it daily altering its figure, and occasionally you can thus trace its gradual process, as it creeps from one side of the pelvis to the other, and passes before or behind the neck of the uterus, and at last involves and *fixes* the uterus in its mass. The inflammatory effusion is by no means always limited to the cellular tissue of the lower or true pelvis. Often from the first a large swelling or effusion can be felt in one or other iliac region; and I have seen one or two cases where the tumour was in a great degree central, and as large as the uterus at the fourth month. Occasionally the disease invades the cellular tissue of the upper or large pelvis, and especially the cellular tissue in the right iliac fossa, and around the head of the cæcum, without even stretching downwards into the true pelvis. Again, we see occasionally in practice smaller inflammatory swellings and effusions limited to single loculaments of the pelvic cellular tissue situated in the anterior or on the posterior walls of the vagina, and not even passing upwards to the cellular tissue contained between the broad ligaments and lying around the neck of the uterus.

I should wish particularly to have it impressed upon your minds in regard to this disease, that there is no pus in the effusion or tumour at first, and that it does not begin in any case by being an abscess, but that first of all an effusion of serum takes place into the inflamed cellular tissue, and no formation of pus generally occurs till about ten or fourteen days afterwards. In one of the first cases of the disease I ever saw, and when I was only beginning to learn something of its nature and course, I got a lesson in regard to this matter which is

very strongly impressed upon my mind. Dr. Andrews, who was then a lecturer on Midwifery in London, was on a visit to Edinburgh at the time, and I offered to show him a case of pelvic cellulitis as an object of interest; for the subject was then new, and not many cases of the disease had been observed. The patient was a young girl, of twelve or thirteen years of age, in whom I had made sure that inflammation had been set up in the broad ligament of the uterus, and caused great swelling and induration of it. This I supposed to be due to an effusion of pus, for we then spoke of and thought of the disease as always "pelvic abscess,"—and about the tenth day from the commencement of the disease, I introduced, in presence of Dr. Andrews, an exploring needle with the view of bringing away the pus and reducing the swelling. But to our astonishment there flowed into the dish held to receive it, not yellow pus, but a transparent fluid so clear and limpid that Dr. Andrews at once whispered to me, "Have you not punctured the bladder?" I knew from the direction of the needle backwards that it was not near the bladder, and after a considerable quantity of this clear fluid had escaped, we soon had evidence that it was not urine, by its rapid coagulation in the cup which contained it. It was serum, such as you see in the stages of many inflammations, and such as you may obtain from the skin after the application of a vesicant; and in the earlier stages of pelvic cellulitis it is this inflammatory serum whose effusion gives rise to the swelling and hardness, and which is the only fluid you will then procure on using an exploring needle. If the inflammation be not now subdued, and the effused serum be not absorbed, it will betimes lead to,

2nd. *The Formation of Pus.*—You may meet with a case of pelvic cellulitis where there is an effusion of serum attended with much pain and distress; yet if the disease proceed no further and resolution of the process be effected, the disease might run its course, and its real nature might be altogether unsuspected, unless you had previously been made aware of the probability of its occurrence. But if the inflammatory process remains unchecked, and goes on to its higher stage of suppuration, the disease is not so likely to be overlooked; and hence most of the descriptions that we have of the disease refer to it only in this more advanced stage. The pus may become developed in any part of the pelvis where inflammation has been set up, and in some cases it is confined to one fascial loculament, while in others it occurs in two or more simultaneously. It does not always remain in the part where first it is formed, but forces its way from one loculament to another, until it reaches a cutaneous or mucous surface through which it may be evacuated. Its progress is often very difficult to trace, and to understand it aright requires an intimate knowledge of the course and connexion of the fascial sheaths of the pelvic organs. Perhaps the most common seat for the development of an abscess is in the cellular tissue of one or other of the broad ligaments of the uterus, and when matter has been formed there, it may make

its way towards the roof of the vagina either by passing in front of the neck of the uterus between it and the bladder, or, as is far more frequently the case, by sinking backwards between the cervix uteri and the rectum. In such a case the abscess may open either into the rectum or into the vagina, which are the two most common canals for the evacuation of pelvic abscesses, and fortunately also the two most favourable. But there are two other cavities into which the matter sometimes, but less frequently, finds its way; and as they are not by any means so accessible, the treatment of the case becomes more complicated and difficult. These are the cavities of the bladder, and of the body or cervix of the uterus; and when one and the same abscess opens into both of these organs, as sometimes happens, a form of vesico-uterine fistula results which is not always very amenable to treatment. On the other hand, you will sometimes find the matter burrowing onwards, and finally making an opening for itself in some part of the cutaneous surface of the body. The pus may pass, for example, underneath the pelvic fascia, and escaping from the pelvis along with the femoral vessels, it may come to point somewhere in the groin; or it may pass backwards through the great sacro-sciatic notch along with the sciatic nerve, and lead to the formation of an abscess in the hip, as I lately saw in a case which I visited along with Dr. Moir. Again, the matter in some cases sinks downwards, and escapes at some point in the pelvic outlet.

One interesting point which it is of importance to observe and to remember in connexion with the evacuation of pelvic abscesses is the extreme rarity with which they become discharged into the cavity of the peritoneum. When we know that inflammation has been going on around some of the pelvic organs, and has led to the formation of pus beneath the peritoneum, we might be apt to form a very unfavourable prognosis, and to look upon a fatal peritonitis as almost certain to ensue. But experience of such cases assuredly does not warrant us in entertaining such a gloomy view, for this reason, that abscesses forming under the peritoneum very rarely perforate it, and open into its cavity. Why this is so, is not very easy of explanation. Cruveilhier avers that it is because the peritoneum is lined, and protected by a layer of fascia, the existence of which is denied by others. In some cases adhesive peritonitis is set up, and the abscess is prevented from bursting into the peritoneal cavity by the resistance offered to it by the two adherent layers of the membrane. But whatever be the explanation of it, the fact is not the less true, and it is always a hopeful one to be borne in mind—that the peritoneum has a very remarkable power of resistance to the passage of matter, and that, in consequence, pelvic abscesses very rarely terminate by evacuation into its cavity. I shall have to revert again to this point when I come to speak of the artificial evacuation of the pus; and I pass on now to notice another product of inflammation in the cellular tissue of the pelvis, viz.

3rd. *Coagulable Lymph.*—When an effusion of firm, solid, coagulable lymph, or fibrine, takes place into one or more of the fascial loculaments in the course of the disease, the swelling which results is extremely dense—really as hard as the "deal board" of Dr. Doherty—and many long months usually elapse before it softens, breaks down, and is discharged. I have a patient under my care just now in whom suppuration has set in after an attack of pelvic cellulitis, which came on when she was in the country, so that there is now formed an abscess in the right iliac fossa. But fourteen years ago she had an attack of the disease, which came on after a confinement, and took on the form I now refer to. On that occasion there was an effusion of coagulable lymph into the cellular tissue around the cervix uteri, forming an extremely dense solid tumour, like a hard cancerous growth, or deposit in the roof of the vagina. Nearly two years elapsed before this effusion was fully absorbed. When pelvic cellulitis terminates in effusion of coagulable lymph, the swelling is always very long in disappearing.

4th. *Sloughing of the Cellular Tissue* of the pelvis sometimes occurs as a result of inflammation in it. It is produced by the compression of the vessels caused by the effusion of lymph or serum into the surrounding tissue. The parts, deprived of their usual supply of nutritive matter, die, and being separated by a suppurative process from the surrounding textures, they come to lie in the midst of a fetid abscess, and a cure in such a case cannot be accomplished till a free opening is made, and these necrosed masses are evacuated, along with the pus in which they are imbedded. I have seen cases where very large sloughs thus escaped, or were removed rather by the finger passed through the artificial opening. These cases are always most severe and exhausting in their character, and usually long also in their duration.—*Med. Times and Gazette, July* 9, 1859, *p.* 26.

118.—ON THE INTRODUCTION OF AN EXPLORING NEEDLE IN THE DIAGNOSIS OF PELVIC ABSCESSES.

By Dr. J. Y. Simpson, Professor of Medicine and Midwifery in the University of Edinburgh.

[It is necessary first to state that the spot at which the feeling of fluctuation is generally for the first time perceived, in cases of pelvic abscess, is in the roof of the vagina, immediately behind the cervix uteri, or to one side, as if where the broad ligament would open below if its layers were separated by accumulated fluid.]

The exploring needle, which is of invaluable service in the examination of diseases, is never used to more advantage than when employed for the exploration of pelvic abscesses, when they happen to be unusually difficult or doubtful in their diagnosis. For in the common run of cases you will usually be perfectly able to make out the diagnosis with-

out this assistance. In any case, however, of pelvic celullitis where you are in doubt as to the formation of pus, and have reasons for being certain of its presence, you may make sure of it at once by pushing an exploring needle into the centre of the tumour. The instrument has, perhaps, been neglected too much as a means of diagnosis in surgery, when we consider with what freedom from danger its employment is attended, and how frequently abscesses, aneurisms, and other tumours have been confounded together, when by its use such mistakes could easily have been avoided. I know of a case where a distinguished surgeon introduced an exploring needle into a tumour in the groin, under the belief that it was a bubo, and to prove to others present that it was so; but to his astonishment, no pus escaped, and instead a quantity of air. It was a crural hernia, the sac of which had become inflamed, and into it he thrust the exploring-needle, and thus saved himself from committing the fatal mistake of laying open a hernial tumour with a bistoury, when he intended only to open an inflamed and suppurating gland. The use of the exploring-needle saves, I know, from many mistakes in obstetric surgery; and since the safety with which it may be introduced into the most important organs and the most malignant tumours has been abundantly demonstrated, I think its employment might be advantageously extended. The best exploring needle is a long, slender, thread-like trocar, with a wire stilet passing through it. Of course there will be no escape of pus through it, when it has been thrust into a solid tumour or into an inflammatory swelling before pus has been fully formed, and even when pus is there, it is usually only a drop or two that escapes through the narrow tube. You will not find the pus in some cases traverse the trocar, particularly if the pus is thick, but on withdrawing the trocar and blowing through it, a drop or two will escape from the end of the trocar. But when none flows out, the negative sign is itself of importance. While, on the contrary, if a drop escapes it may be a sufficent warrant for you to proceed to the more free evacuation of the purulent collection. A medical practitioner, of great ingenuity, who had been many years in India, when his health began to fail him, came home several years ago, and while spending a short time in Edinburgh, I had an opportunity of showing him some cases of pelvic cellulitis, where I succeeded in demonstrating the presence of pus by the use of the exploring-needle. Soon after going to London he met some medical men there in consultation upon an old Indian patient of his. The case, as he afterwards told me, seemed to him to present the chief characteristics of the examples of pelvic abscess which he had seen here. He expressed to the medical attendants of the lady his opinion of the case, and proposed as a means of setting the difficulty to introduce an exploring needle into the seat of the disease. The other doctors rather scoffed at the idea; but, as they were altogether at sea as to the nature of the disease, they agreed to allow him to introduce the exploring needle, which he

accordingly did. To his great surprise and vexation, however, no escape of pus followed the withdrawal of the stilet; but, being still unconvinced that his opinion was erroneous, as a last resource he applied his mouth to the end of the tube, and succeeded, by sucking it, in extracting a few drops of pus sufficient to convince his sceptical brethren of the true nature of the case, and of the value of the exploring-needle as a means of diagnosis. He was then allowed to open the abscess, and the patient got speedily well. In consequence of his treatment of this case, my friend got rapidly into a large practice in London, but after a few years his disease unfortunately returned, and death struck him down.

When, then, you have a patient attacked with rigors, followed by a high degree of fever, and attended with pain in the interior of the pelvis, and when, after a time, the fever changes in character, and instead of being inflammatory presents more of a hectic type, you may be pretty certain that she has been suffering from an attack of pelvic cellulitis which has passed on to suppuration. And in every case it will be possible for you to correct or confirm your diagnosis by means of a careful local examination. One or two marked symptoms may enable you sometimes to make a good guess as to the existence of the disease. Several years ago, I was attending with my friend Dr. Wood, an anxious case of labour, where the lady had manifested symptoms of insanity in the last periods of pregnancy. While thus engaged, a gentleman came, bearing with him a note to me from the North of England. The note was written by the medical attendant upon the gentleman's wife, and anxiously desired me to visit the lady as soon as possible. In relation to her disease it stated only two bare facts, viz., that the lady who had been confined six weeks before, was hectic, and was suffering from great pain in the pelvis and down one of the limbs. I read the note to Dr. Wood, saying it was, I believed, a case of pelvic abscess, against the accuracy of which diagnosis he was inclined to wager. On visiting the patient in England next day I found a large pelvic abscess which I freely opened, and the patient made an excellent recovery.

Formerly, the changes produced by the disease caused it frequently to be confounded with cancerous, fibroid, or cystic tumours of the uterus and ovaries, or other organs of the pelvis; but now we may be almost always sure of the true nature of the case when we find the tumour associated with constitutional phenomena, running a regular and rapid course, and adhering to the bone or periosteum in the remarkable manner to which I have referred. For, let me repeat, inflammatory tumours feel fixed and immovable to a degree seen in the case of no other morbid growth, and more particularly when occurring in the broad ligament,—their most common seat—and lying close to the ilium, they feel so hard and adherent that they might almost be mistaken for an osseous tumour. The old stories of large ovarian and uterine tumours of a supposed nature yielding under

mercury, &c., were in all probability merely tumours formed by inflammatory effusions of the kind I have been speaking of.—*Med. Times and Gazette, July* 16, 1859, *p.* 52.

119.—ON VESICO-VAGINAL FISTULA.

By Dr. GEORGE BUCHANAN, A.M., Glasgow.

[Dr. Buchanan gives this case chiefly to show the operation as it was performed by Dr. Bozeman, who was then in Glasgow. The patient, after a severe labour, in which instruments were used, had a fistula between the bladder and vagina, causing the urine to dribble away constantly.]

On admission to the Infirmary, examination of the parts disclosed a fistula the size of a sixpence, communicating between the bladder and vagina, the situation of which was about an inch internal to the orifice of the urethra, and in the mesial line. The perineum was found to be ruptured, and the fissure between the rectum and vagina to extend for about three inches, laying these two canals into one for that extent.

Dr. Bozeman, of America, being in Glasgow on a short visit at this time, he was requested to examine the patient, and he pronounced it a case in which he could nearly insure success by his new plan of operation.

A consultation of the physicians and surgeons of the Infirmary was called, and they unanimously agreed to request Dr. Bozeman to perform the operation. Accordingly, that gentleman, having shown and explained the exceedingly perfect and ingenious instruments which he had brought along with him, proceeded to operate in the following manner, in presence of the hospital staff, and several medical gentlemen who had heard of the case and were interested in the result.

The patient was placed on a table on her knees, leaning forward on her elbows, and the parts were brought clearly into view with the aid of a single-bladed silver speculum, in shape somewhat like a shoehorn, bent at a right angle about three inches from its broad extremity. This bent part was easily introduced, and being pulled up against the rectum, disclosed the cavity of the vagina throughout its whole extent, the fistula in view now on its inferior wall. The operator carefully made raw the edges of the opening, by seizing first the anterior lip with a small hook, and cutting off a slice about an eighth of an inch in breadth, the edge being bevelled at the expense of the vaginal mucous membrane, so that the raw surface was nearly a quarter of an inch broad. The same kind of edge was formed on the posterior lip of the fistula, but this was accomplished with scissors ingeniously contrived to be used with the right hand, and to cut either from right to left, or the reverse, as might be desired. During this

proceeding a good deal of oozing of blood took place, which somewhat retarded the operator; but by careful sponging, the parts were kept free sufficiently to allow all the steps of the operation to be clearly seen. When the fistula was converted into an oval opening with perfectly smooth edges, the patient was allowed to rest a little till the bleeding should cease. The edges were then brought together with four silver-wire sutures. The needles were introduced at the distance of about three-sixteenths of an inch from the cut edge, not pushed through into the bladder, but turned across the wound, beneath its mucous membrane, and so brought out at a corresponding point on the opposite side. In this way four silk threads were passed, and to their extremities the silver wires were attached and drawn through. When the opposite wires were pressed together, it was found that the edges of the opening fitted perfectly to each other. The wires were then fixed *in situ* by the button shield, which is the peculiarity of Dr. Bozeman's plan of procedure. An oval disk of thin lead rather larger than the opening, bent into a convexo-concave shape, was pressed against the wound, and found to fit the contour of the vaginal wall. In this were four small holes, at equal distances along its long diameter, through which the four pairs of wire were passed, and the shield was then slid down, its concave surface being pressed against the incision. The wires were then pulled tight, and fixed by leaden bullets. A catheter with a double curve was placed in the bladder, to be retained till the cure was effected. The patient was then removed to bed, and had immediately a grain of solid opium, which was ordered to be repeated every sixth hour. A nourishing diet was prescribed, with as little fluid as possible, and a pint of London porter daily. Previous to the operation the bowels had been cleared out by a large injection.

August 19. Patient has felt comfortable since the operation. Urine comes freely by catheter, and is collected in a small bed-pan. None dribbles away by the vagina. The bed is kept quite dry.

21. Still going on well. No uneasiness in the wound, and no appearance of ulceration going on. No motion of bowels, or tendency to it, since operation. The opium was diminished to a grain, morning and evening.

26. The catheter has daily been removed, cleansed, and replaced. It remains *in situ* without apparatus, and the patient has remained steadily in one position. The bowels have not been moved, and there is apparently no ulceration around the shield. This being the ninth day from the operation, and the period which Dr. Bozeman recommends, I proceeded to remove the apparatus. The patient was placed on her knees, as at the operation; and the vagina being exposed with the aid of a bent speculum, I removed the bullets by twisting them a little to one side with a long forceps, and snipping across the wires between them and the leaden shield. When the bullets were cut off, the shield fell off, and the wound was seen perfectly cicatrized through-

out its whole extent. Three of the wires I easily got hold of with a pair of forceps, and pulled out; the fourth had got embedded in the soft tissue, and I could not find it. However, knowing that a metallic wire would produce no irritation, I left it in, rather than disturb the parts by a prolonged search. The patient was again removed to bed, the catheter retained as before, and she was requested to move about as little as possible for a day or two. The opium was discontinued.

27. Urine passes entirely by the catheter. Complains of headache and uneasiness in bowels. To have two drachms of sulphur and bitartrate of potash.

Sept. 1. Bowels moved freely yesterday by a large dose of black draught, after which the use of the catheter was discontinued. She can now retain the urine for some hours, and pass it voluntarily. Dismissed to-day.

On the 7th September I visited the patient at her own house, and found that the cicatrix had become quite firm. She can retain urine for two or three hours in the recumbent position, but not so long in the erect. Still complains of headache and indigestion, with irregularity of the bowels. I ordered some Gregory's mixture and a small dose of quinine, twice daily.

On 16th September the patient was stronger, but still had some uneasiness in stomach and bowels. She was ordered to take a little exercise in the open air, having confined herself to the house since she returned home. In examining the cicatrix, which I found perfectly strong, I felt the sharp point of the wire which was left in the tissues when the shield was removed. It had produced no inflammation or ulceration, and I easily seized it with the forceps and withdrew it. The bladder has not yet entirely regained its retaining power when the patient stands or walks, but she has perfect control over the urine for several hours when in bed. The bed is never wet, as it used constantly to be, and both the patient and her husband express themselves as exceedingly happy at the result, and thankful for the success of the operation.

I have published this case at Dr. Bozeman's request, and because the merits of this operation are still doubted in some quarters. True, it has not succeeded in every case, and in some instances death has been the issue; but the same can be said of every operation in surgery, however simple. There can be no doubt, however, that a measure of success has followed this proceeding which cannot be affirmed of any other mode of treatment. I do not intend to add any statistical or critical account of its success, but it may be proper to allude to the plan of Dr. Sims of New York, who claims a large amount of success for his operation. To him belongs the credit of having introduced all the preliminary steps of the operation as performed by Dr. Bozeman. The use of the single broad-bladed speculum, and the position of the patient on her knees, does away with a great part of

the difficulty of operating on a part so concealed and inaccessible as the wall of the vagina. The formation of a broad, bevelled raw edge round the fistula affords an extensive surface for union. The introduction of the sutures at a distance from the edge of the wound allows an amount of traction and support which cannot be attained by stitches placed close to the incision. Above all, the employment of thin silver wire as a substitute for silk thread prevents the ulceration or cutting out, which is inevitably caused by organic substances imbedded in the living tissues. It has recently been found by various experimenters that it is of little consequence what metal is used, and iron, copper, and platinum wires have been found to act as well as silver; and the material which may ultimately be chosen as the best suture will depend on the flexibility of the metal.

Dr. Bozeman, in the accounts which he has published of his operation, freely acknowledges that, in the proceedings above mentioned, he has closely followed the directions of Dr. Sims, and only claims for his method of fixing the wires by a metallic shield, an amount of success which has not followed that of Dr. Sims, who employs two bars of lead, after the manner of the quill suture. This method of drawing the edges of the wound together, called by Dr. Sims the "clamp suture," is a decided improvement on the common interrupted suture; but the use of a metallic shield, as recommended by Dr. Bozeman, seems to make the operation perfect. By its use the wires can be pulled perfectly tight, and the vaginal aspect of the incision is drawn up into the concavity of the shield; so that towards the interior of the bladder is presented, not the line of the wound, but smooth lips of mucous membrane. The shield also prevents the vaginal and uterine secretions from coming in contact with the wound, which is thus protected, both externally and internally, from the presence of irritating fluids. In the case detailed, the menses flowed during the progress of the cure; and had it not been for the shield, there is little doubt that a considerable irritation would have been set up.

It is much to the credit of American surgery that this distressing affection can now be treated, with a probability of success even greater than many other surgical diseases; and the surgeons of this country cannot fail to recognize the claims both of Dr. Sims and his follower, Dr. Bozeman. Dr. Sims has done much by perfecting the operative part of the proceedings, but we cannot deny to Dr. Bozeman the merit of adding the last, a very essential part, of the treatment. It only remains to add, that the whole of the hospital staff, as well as the other medical men who were present at the operation here detailed, besides being satisfied with the perfect adaptation of the operation to effect the end proposed, were unanimous in according to the skill of the operator a large share of its successful result. There was but one opinion, that while he was entitled to share in the credit of devising the means, his mode of employing them exhibited the masterhand of an accomplished surgeon.—*Glasgow Med. Journal, Oct.* 1858, *p.* 318.

120.—ON THE TREATMENT OF URETHRAL CARUNCLES.

By Dr. J. Y. Simpson, Professor of Medicine and Midwifery in the University of Edinburgh.

[The occurrence of florid red caruncles at the orifice of the urethra is not infrequent, and when removed, they are unfortunately very liable to be reproduced. Provided these growths do not cause pain or inconvenience, it is better to leave them alone; but if a source of annoyance, surgical interference generally becomes necessary. In some cases their removal cures the case permanently, but in many, as above stated, the relief is only temporary. This operation, however, simple as it may appear, is not always so easy and successful as the descriptions of it found in books might lead you to suppose.]

You will read, that if you apply a ligature to the polypoid forms of urethral caruncle, cut off the sessile ones, and apply in some cases alum, nitrate of silver, or some astringent or caustic to the parts, you will be able in most cases to cure your patient. But those who speak thus cannot have had many patients for a lengthened period under their observation; otherwise they would have found the disease recurring far more frequently after such operations than their published accounts indicate. For after simple removal with a ligature or scissors, they almost invariably grow again; and there is one further point about their pathology to which I have forgotten to refer, but which renders it a matter of the greatest difficulty to effect a perfect and permanent cure by removal of the urethral caruncles.

There is often in such cases not merely a prominent red caruncle, or a number of them, lying at the orifice of the urethra; but there are in addition to these, a number of small very red specks scattered all about the mucous membrane, around the orifice, and upon the neighbouring mucous surfaces, which red specks and patches are not very striking in appearance and may very easily be overlooked, but which are found to be as exquisitely tender as the urethral caruncles themselves when touched with the point of a probe. These insignificant looking flat red spots are all so many seats and centres of the painful sensation; and if in removing the larger bodies you leave them unheeded, you will never succeed in curing your patient or in affording her permanent relief. From the study of the homological anatomy of the organs of generation in the two sexes, physiologists have come to recognize in the female organs, parts or members corresponding to each of the different constituents of the generative organs of the male with only one very marked exception. Thus we know that the large and well-developed uterus of the female is only the representative or analogue of the small pouch or sinus pocularis in front of the crista galli of the male urethra into which the seminal ducts themselves—the analogues of the Fallopian tubes—enter. So that when in passing a bougie into the male bladder your instrument becomes arrested at this point, as is very frequently the case, you have in

reality got entangled in the male os uteri. But there is one member of the generative apparatus of the male for which anatomists have not yet been able to determine the existence of a certain analogue in a female; I mean the prostate gland. All anatomy, both human and comparative, leads us, however, to suppose that the female urethra corresponds to that portion of the male which lies in or behind the prostate at the neck of the bladder, and that the prostate gland belongs rather to the urinary than to the generative organs. In this case analogue in the female of the prostate in the male should be sought for in connexion with the urethra or urinary canal, and not in connexion with the uterus, as has most commonly been attempted to be done. Now it may be that in the numerous glandular structures which are scattered about so profusely in the neighbourhood of the orifice of the urethra in the female, we have the representatives of the mass of acini which combine to form the conglomerate prostatic gland of the male; and, if so, it would be a curious subject to determine how far the disease which we are now considering depends upon an enlargement and change in these small scattered follicles, and how far it bears a resemblance to some of the diseases occurring in the prostate. But whatever may be said as to the pathological anatomy of the disease, one thing is certain in regard to it, and that is, that, as a very general rule, no hope of a permanent cure can be entertained except by the radical removal of all the small red spots, as well as of the more prominent and projecting tumours. Different authors have recommended different

Methods to be followed for the Removal of Urethral Caruncles.

1. *Application of a Ligature.*—As in the case of so many other morbid growths, and encouraged, more especially, by the success which attends the use of the ligature in the removal of internal hemorrhoids, some have proposed to get rid of these urethral caruncles by tying a ligature tightly round their base, and so strangulating and causing them to slough off. But here it could only be applicable to those cases where the growth was stalked or polypoid; and even then it would be a much more tedious and painful process to tie a thread round the neck of the tumour and leave it there to die and separate, than to have recourse at once to the simpler

2. *Excision with a Knife or Scissors.*—If the ligature may seem to possess some advantage theoretically over cutting instruments in such cases,—inasmuch as there can be no fear in using the former, of the hemorrhage which you might suppose likely to attend the latter, when applied to such vascular growths,—yet in practice you will find that, while the ligature is in most cases very difficult, or indeed impossible of application, the excision of the diseased structures is not attended with any formidable degree of hemorrhage. I never saw a case where it was not very easily controlled. You may use either a knife or a

pair of scissors for the excision. It is usually advantageous to draw out first the caruncles with a hook or small vulsellum, in order to make their removal complete. In operating, you must be careful to remove not only the projecting tumours, but also the piece of mucous membrane on which they are seated, as well as any pieces of membrane that may be studded with the red spots of which I have spoken to you. Removal of urethral caruncles in this way, I must again warn you, however, though it does sometimes effect a permanent cure, usually affords only a temporary relief. For a month or two, or even longer, the patient may remain free from pain; but, unless some further more potent remedial means be had recourse to, her sufferings are almost certain to return. Along with Dr. Fowler, I saw a few days ago a patient with a painful tumour at the orifice of the urethra, which I removed along with a portion of sound mucous membrane; and this has had the good effect of releasing her in the meantime from the local pain and irritation which have been distressing her. But I greatly fear that you will find as a general rule, that the reproduction of the caruncle and of all its painful symptoms will take place, unless you make use of some powerful means for destroying the morbific tendency of the part; and I believe that the most hopeful and the most effectual means that you can in such a case employ is the

3. *Application of the Actual Cautery.*—I have tried caustics of many different kinds, for the cure of this intractable disease. But seldom have I found permanent success from the employment of any of them. I had a patient under my care several years ago, with a very painful growth at the orifice of the urethra, which I had frequently attempted to burn down with different kinds of caustics, but it was always reproduced; and when excision was had recourse to the result was no better. I was beginning to despair of ever being able to effect a cure, when at the suggestion of my friend Professor Retzius, of Stockholm, who saw the case with me, I destroyed it with the actual cautery; and ever since the patient has remained perfectly well. Since that time I have used it frequently, and, in many cases, with the happiest result. Yet I must confess to you, that this means, too, has in some instances failed to effect a permanent cure. In order to apply the actual cautery to destroy a caruncle or caruncles of the urethra, 1, you may use either an iron of proper size and shape adequately heated; or 2, you may apply the requisite degree of heat through the galvano-caustic wire. The latter method is specially useful when the caruncles extend up the urethra higher than the orifice,—because you can introduce and apply the wire, before heating it up by the transmission of the galvanic current. Apply immediately afterwards cold water and cloths soaked in it; and subsequently treat the ulcerated surface, after the slough separates, with very frequent applications of black wash, zinc lotion, or other surgical applications. The position, therefore, in which we at present stand with regard to the treatment of these urethral caruncles is such, that their excision with the knife or

scissors, and their removal by means of caustics, are to be looked upon and employed as measures for affording usually a temporary relief only; while their destruction by means of the red-hot iron, or the galvano-caustic wire, affords a reasonable prospect of a permanent cure, although even by this more heroic treatment we cannot be absolutely certain in every case that we free the patient from her disease for ever.

Palliative Treatment.—I have one word more to add with respect to the treatment of this painful affection before I have done with it, and it is this. In those cases where all radical measures have proved ineffectual for relieving your patient, or where the caruncles are in such a situation as not to admit of their removal, you will require to administer sedatives of various kinds internally, or, what is better still, to apply some local anodyne. The best local remedy that I know of for this purpose is prussic acid, applied in the form of an ointment made up of two drachms of the dilute hydrocyanic acid of the Pharmacopœia to the ounce of lard. A bit of this ointment about the size of a pea applied to the part three or four times a-day, often relieves the pain more effectually than any quantity of opium administered internally, or than any other form of local anodyne which I have used. Aconite and chloroform ointments sometimes also form good palliatives. So does tepid water. You will add, sometimes very greatly, to the comfort of your patient, by advising her to sit in a warm hip-bath during micturition.

[We quite agree with Dr. Simpson in most that he says on this subject. In many of these cases we have been successful without the actual cautery, and simply by the application of the strong nitric acid. Both in nævi of the rectum and at the mouth of the urethra in the female nitric acid will often succeed; but it must be kept applied to the part for a much longer period than is generally done. Surgeons generally rub or apply it well over the part, whereas it should be kept in contact for a minute or two. Taper a lead pencil or bit of stick, and cover the end over with folds of cotton thread for about an inch. Then apply a little oil round the nævus, so as to stay the action of the caustic. Next dip the stick and cotton thread into nitric acid, and keep it well applied for a minute or so to the nævus, pushing the stick a little way up the urethra. Now withdraw it, and oil the adjacent parts again, so as to prevent the acid acting too deeply on them. We have thought, since reading Dr. Simpson's paper on different caustics, that his mixtures (equal parts) of chloride of zinc and oxide of zinc, well dusted over the nævus, would be a good application.—Ed. Retrospect.]—*Med. Times and Gazette, April* 2, 1859, *p.* 333.

121.—DIAGNOSIS OF CARCINOMA UTERI.

As to the differential *diagnosis* of carcinoma uteri, I have little to say regarding it at present; for you have not yet had an opportunity of being made acquainted with the other diseases with which it is

liable to be confounded. But there is one observation which I should wish to urge upon this point: it is this, that you are not entitled to diagnose the existence of cancer in the womb from any degree or kind of pain, bleeding, and offensive discharge, from which the patient may be suffering, not even when these are combined with the pale cachectic look which is usually pathognomonic of the disease. All these local and constitutional symptoms may be present in other uterine diseases besides cancer; and, in some latent cases of cancer, they may be found absent. You can detect it with perfect certainty only by physical diagnosis. You must make a vaginal examination with the finger—for the speculum is here of little service—and only when the sense of touch has assured you of the condition of the cervix uteri, and not till then, can you honestly and conscientiously pronounce upon the nature of the case.

One morbid condition of the cervix uteri with which cancer of the organ may be, and often is confounded, is that which results from chronic inflammation in it. This causes enlargement of the cervix and expansion of the os, attended with great induration, and when ulceration sets in, and pain and menorrhagia are developed, the case may very readily be mistaken for a case of cancer in its first stage. But here you have always the distinguishing characteristic, to which I have already alluded, that in chronic inflammatory induration of the cervix the deposit is confined to the organ itself, which remains loose and mobile; whereas in the case of cancer the surrounding tissues usually become early involved in the disease, and being infiltrated with the morbid deposit make the cervix uteri feel firm and fixed. And when ulceration has set in, you will find that the ulcer which results from inflammatory change—though it may look very irregular, rough, and ugly—is always on a level with the unbroken surface, or even projects above it, whereas the cancerous ulcer is always depressed, excavating, as it were, and eating out the part in which it has its seat. One often sees mistakes made with regard to the diagnosis of cancer of the uterus, which are almost unconceivable, and which you may in almost every case avoid if you will just keep your wits about you when making an examination, and use a little common sense—a most invaluable and indispensable aid in all kinds of diagnosis. When you feel a rough, irregular, excavated or anfractuous ulcer seated on a hardened base, and surrounded by hardened tissue in any other part of the body, as the exterior of the chest, face, or extremities, you set it down at once as cancer; and when the finger applied to the os uteri recognises the same condition you need not doubt that here, too, you have to deal with the same disease. Cancer of the uterus used often formerly to be confounded with simple polypus uteri; and Dupuytren and other Parisian surgeons have recorded instances of patients being sent to them from the country, who had been told by their own doctors that they must inevitably die of their complaint, and who were completely cured by the simple operation of

the removal of the polypus, and were thus recovered, as it were, from the very brink of the grave. I have seen the same mistake frequently committed in our own times, and yet it is a mistake which care will always enable you to avoid.—*Med. Times and Gazette, Jan.* 15, 1859, *p.* 54.

122.—ON INTRA-UTERINE POLYPI.

By Dr. A. K. GARDNER, New York.

[As to the manner of separating tumours from the abdominal wall, the author observes that there are but three modes; viz., 1, by cutting instruments, as the scissors or bistoury; 2, by ligature; 3, by the écraseur. The second is open to objection from the danger of pyæmia. The third is a compromise between the other two methods, but is open to the objection that it leaves a ragged and crushed surface, which will heal only by granulation.]

If the polypus be fibrous, and so large as to render such operations impracticable, the body is to be seized by hooks, hooked forceps, or even with an ordinary obstetric forceps, and forcibly drawn externally, and there subjected to such operation for its removal as may be deemed advisable, The force required for thus extracting an intra-uterine polypus is so great as not only to displace the uterus from its situation, so as to bring it down upon the perineum, but it also necessarily inverts it, in order to expose the point where the pedicle unites with the uterus. Upon this pedicle being cut, the uterus often returns to its natural position with an audible snap, like that made by the hollow india-rubber ball of a breast-pump or syringe, when the pressure upon its sides is removed and it suddenly resumes its natural position.

Sometimes, however, we find that the enlargement of the uterus is not due to a pediculated tumor which hangs from the uterus, but we have a fibrous tumour developed in the uterine stroma. Sometimes this is found to be immediately under the mucous membrane; but even if it is not so superficial, the best treatment—if any treatment is necessary—is to cut down upon it, making a deep incision through the mucous membrane of the uterine cavity, through any intervening tissue, down upon the tumor. It is better that the incision should penetrate the tumor than not to attain to it, for the fibrous tumor being bloodless, no ill result can ensue. We expect a double result from this incision. We take off the pressure—the cause of the hemorrhage—by cutting through and thus destroying the congeries of enlarged and congested vessels enveloping the tumor; and secondly, we allow the tumor to enucleate itself, and thus to transform itself into a fibrous polypus, permitting, at some after period, an easy removal by any of the means already mentioned. It is to be hoped that some subacute inflammation may take place in the tumor, resulting in a suppurative disorganization, for we know the marked tendency

that fibrous tumors of the uterus have to degenerate when disturbed. This is especially noticeable in those tumors which accompany pregnancy, and which, when injured by the pressure of parturition, and perhaps deprived of some portion of their accustomed nutriment by the arrest of the uterine circulation consequent upon the return of the uterus to its natural size, and the closure of the uterine sinuses, degenerate and slough away.

The secondary effect of this incision, even if not successful in the main purpose of effecting the enucleation of the tumor, is to diminish the hemorrhage, at least temporarily. That, attendant upon the operation, is easily controlled by the tampon or the colpeurynter.

It should be especially borne in mind that, in all intra-uterine operations, the season for their employment should be selected with particular reference to the usual period of menstruation. Even if the menstruation has been absent for several months, being arrested by debility, or perhaps confounded with the hemorrhages which have occurred irregularly, yet the *molimen menstruale* is still present, and might seriously affect the success of the operation.—*American Med. Monthly, July*, 1859, *p.* 48.

123.—*A Convenient Mode of Treating Vaginitis and Superficial Inflammation of the Cervix Uteri.*—M. Foucher mentions in the *Bulletin de Thérapeutique* of May 15th, that, in the above affections he prefers ointments to injections. In simple vaginitis, he introduces every morning, with the assistance of the speculum, a good-sized pledget of cotton wool, well smeared over with tannin ointment, into the vagina, bringing the pledget in contact with the cervix. By means of a thread tied to it, the wool can be removed by the patient, either, in the evening or on the next morning. Every time the pledget is taken off, an injection of cold water, or of a solution of alum, should be used to wash the mucous membrane of the vagina. By a little practice, patients soon learn to introduce the pledget themselves, the surgeon then cauterizing the inflamed surfaces to hasten cicatrization. M. Foucher uses the same treatment for fluor albus with much success; but he tries, at the same time, to modify the morbidly disposed organism with the following pills: Extract of rhubarb, quinine or extract of bark, steel reduced by hydrogen, of each half a drachm—for forty pills. To counteract constipation, the author has found half a grain of powdered belladonna, given every night in the form of pill, extremely useful.—*Lancet, June* 11, 1859, *p.* 591.

124.—ON PRURIGENOUS VULVITUS.

By Dr. J. Y. Simpson.

Not infrequently a prurigenous eruption appears on the mucous membrane of the vulva, and extends up along the vagina as far as the cervix uteri. It extends also often, and is sometimes, indeed, origi-

nally situated on the cutaneous border of the vulva, and appears on the outer cutaneous surface of the labium, spreading backwards along the perineum, to the circle of the anus. Occasionally, it is a flitting and transient affection, recurring with menstruation, pregnancy, or delivery. But patients will apply to you from time to time, in whom the disease has become more chronic and fixed, having lasted for weeks, or months, or even years; producing almost constant irritation and distress; frequently interfering with rest and sleep, and rendering the victims of it miserable and almost deranged. When the disease has become somewhat chronic and necessitates the patient to attempt to alleviate it by constant and sometimes rough friction, you will find the mucous and even the cutaneous surface at the most irritated parts white and thickened with red fissures, and scratches appearing on the affected part. I have spoken of the disease as fundamentally prurigenous; and we can often see on the affected surface a small papular, and sometimes a vesicular, or even aphthous eruption; but cases ever and anon occur, of severe pruritus in these parts, without your being able to trace in them any distinct eruptive appearance.

Treatment.—Prurigenous disease of the vulva or neighbourhood can be relieved, and generally cured, by the assiduous and persevering application of a solution of biborate of soda (five or ten grains to the ounce of water), infusion of tobacco, either alone or containing a similar quantity of borax dissolved in it, or an ointment of iodide of lead (one drachm to the ounce), or an ointment of bismuth and morphia. Chloroform also applied locally, in the form of vapour, liniment, or ointment, forms one of the most certain means which you can use. The simplest way of employing it is by adding a drachm of chloroform to an ounce of any common or sedative ointment or liniment. You will find great advantage in the management of the disease in alternating some of these local applications with each other, for most of them begin to loose their good effects when persevered in above a few days consecutively. In the more obstinate and severe cases, strong astringents are sometimes of the greatest use, employed either alone or along with sedatives, as a very strong solution or ointment of alum or aluminated iron or tannin; or the powder of these substances mixed up with some powdered morphia, and applied continuously, for a few days, to the irritated part. Several times, in very obstinate cases, and where the disease was limited to a portion or circle of the cutaneous tissue, I have temporarily separated the affected portion of skin by a free subcutaneous incision with a tenotomy knife. Of course it leaves no wound except the small wound left by the entrance of the knife itself. I have found this little operation perfectly and entirely successful in some cases, and only of temporary benefit in others.

Perhaps it is unnecessary to add that the general health of the patient must be fully attended to, and that sometimes arsenic, aqua potassæ, and other alterative medicines of that description are required.—*Med. Times and Gazette, April* 16, 1859, *p.* 385.

125.—ON PRURITUS OF THE LABIA IN FEMALES.

By Dr. EDWARD RIGBY.

[The following case illustrates what we frequently meet with in practice, and is difficult to relieve. Dr. Rigby makes no mention of the nitrate of silver in these tiresome complaints. We have found no remedy to equal it, but do not use it as is generally recommended in large, but *small* proportions. If you meet with one of these cases of violent itching, get a pretty large bushy camel's-hair pencil, and dip it in a solution of nitrate of silver (from two to five grains to the ounce) and push it well up to the os uteri: repeat this three or four times a day, keeping the patient as much horizontal as you can, and taking off all pressure from the hemorrhoidal veins by very gentle laxatives. A stronger solution, done seldom, does not answer so well as a weak one, done often. The patient must be taught to do it properly herself. Dr. Rigby's case is as follows:]

Mrs. A., aged 34, married eight years, never pregnant. Feb. 23. Tall—brunette—pale—sallow. Constant heat, with sense of rawness, smarting, and intense itching of the vulva; much worse after a catamenial period: constant purulent discharge. Bowels confined. Tongue deeply sulcated, rough on the dorsum, with clean edges. Pulse very feeble. Skin clammy and moist; urine thick from lithate of ammonia. Headache both in the forehead and vertex; is of a rheumatic habit. Was suddenly seized four months ago, while standing at church, with great swelling, heat, redness of vulva, the labia becoming hard, and attended with intense itching.

Examination.—Nymphæ red and much excoriated; os uteri is directed forwards; the fundus is felt directed backwards, it is hard and swollen: introduced the sound, and replaced it easily.

Pil. hydr. extr. coloc. ext. hyosc. aa ℈i. M. ft. pil. xij. sumat ij h. s. pro. r. n.

Haust. ferri et magnesiæ sulph. primo mane.

℞. Acidi hydrochlor. dil. acidi nitrici dil. aa ℥i.; liquoris Taraxaci ℥j.; infusi cinchonæ oblongifol. ℥vii. M. ft. mistura sumat cochl. magna ij. bis die ante cibum. ℞. Potassæ bicarb. ℈iv.; potassæ nitratis ℈ij; sp. ammon. arom. ℥ss.; aquæ ℥vijss. M. ft. mistura sumat cochl. magna ij. post prandium.

16th. Better in every respect—the morning laxative does not appear to act comfortably. Rep. mist. cinchonæ ante, et mist. potassæ, post prandium. Let her take 2 of the pills just before the next catamenial period. ℞. Pil. rhœi comp. gr. v. h.s.

April 6. Catamenia appeared about ten days ago, rather suddenly, four days before the time, with much pain. The irritation was very severe for a time, and has continued slightly since. Bowels very confined even with the aid of medicine. Appetite better; general health fairly good; tongue is still sulcated, though in other respects natural.

℞. Acidi nitrici dil., acidi hydrochlor. dil. aa ℥i.; liq. Taraxaci ℥i.;

infusi sennæ comp. ℥iv.; infusi gentianæ co. ad ℥viii. M. ft. mistura sumat cochl. magna ij. bis die ante cibum. Rep. pil. p.r.n. Let her take a large enema of warm water occasionally.

℞. Sodæ biboratis, vini colchici, aa ℥i.; decocti papav. Oi. M. ft. lotio.

10th. Is in great suffering—says that the lotion appeared to excoriate her, and that the mixture had no effect upon the bowels. The enema, however, brought away a large accumulation of hardened fæces. Rep. enema p. r. n. Rep. mist. cinchonæ.

℞. Extr. aloes aquosi ℈ij.; extr. hyosc. ℈iss.; mastiches gr. xij. M. ft. pil. xx. sumat ij. h.s.

Liq. plumbi diacet ℥ss. decoc. papav. Oj. M. ft. lotio.

May 7. Better in every respect; her constipated bowels are the great difficulty.

The constipated and unhealthy bowels and other symptoms of general derangement of the digestive organs occurring in a rheumatic habit with considerable evidences of debility, as shown by the pale sallow face, feeble pulse, and vertex headache, are the characters which point out the real features of this case. The circulation had probably been growing more and more unhealthy for some time; and if the cold which she caught by getting the lower extremities severely chilled, had not localised the mischief on the external generative organs in the form of pruritus, it is more than likely she would have suffered an attack of rheumatic or gastro-bilious fever.

The fiery heat and redness of the affected parts fully characterised the inflammatory nature of the attack. The congestion and irritation produced by the retroverted condition of the uterus probably still further increased the disposition of the complaint to localise itself in this form. The retroversion presented nothing peculiar or unusual; it was simply a feeble atonic uterus, with its fundus forced downwards and backwards under the weight of habitually constipated bowels. The alterative, laxative, and tonic plan of treatment quickly produced a great improvement in all her symptoms, and she continued nearly free from annoyance for some weeks, when the evil appeared to be woke up again into activity by the occurrence of a catamenial period. I cannot help thinking that she had unconsciously lapsed again into some degree of her former habits of constipation and gastro-biliary derangement; it was evidently a matter of no slight difficulty to overcome her longstanding disposition to constipation; and the alteration which I made in the mixture appeared to fail entirely; nevertheless she continued to improve steadily in general health; and the occasional use of a large warm-water enema effectually prevented any intestinal accumulations. The capriciousness of local remedies in this affection is well known; but I was much surprised at the entire want of success of the lotion of borax and colchicum wine in poppy decoction, which, in a somewhat similar case, had afforded the greatest relief.—*Med. Times and Gazette, Jan.* 1, 1859, *p.* 4.

126.—*Arsenic in Pruritus Vulvæ.*—M. Imbert Goubeyre relates a case of obstinate pruritus occurring early in pregnancy, and which had resisted the most varied means, yielding rapidly to minute doses of Fowler's solution of arsenic.—*Gazette Hebd., Jan.* 28.—*Med. Times and Gazette, Feb.* 19, 1859, *p.* 188.

127.—A CASE OF PROLAPSUS UTERI, CURED WITHOUT OPERATION, OR THE NECESSITY OF WEARING A PESSARY.

By Wm. E. C. Nourse, Esq., Brighton.

A single woman, aged about sixty-five, applied to me, in February, 1858, on account of prolapsus uteri, from which she had suffered for three years. She looked haggard and worn, had been losing flesh, strength, and appetite for many months, and complained much of depressed spirits, dragging pain in the loins, and inability for exertion. The womb was generally down, though she could reduce it. I found it hanging between the thighs, about the size of a melon, the mucous membrane dry and glazed, of a reddish-brown colour, and superficially ulcerated. The orifice of the urethra occupied the usual position in front of the tumour, and the os uteri was seen at the lowest part of it. The womb being replaced, was found very movable, and the vagina much relaxed and enlarged.

Considering the success which had attended operations for the cure of prolapsus by partial occlusion of the vagina, I determined to see if I could not apply the principle of these operations in a simpler way. I therefore directed that, now that the womb was replaced, it should never again be allowed to come down, even for a single moment; that a sort of thick pad, or cushion, of a length and breadth sufficient to cover completely the external parts, should be applied, and be kept in its place by a broad and firm T-bandage, before she again rose from the recumbent posture; that she should prepare a sufficient number of these pads and T-bandages, should always put one on before she rose from her bed in the morning, just as a ruptured person puts on a truss, and should never go about without one; and, lastly, that she should introduce every night into the vagina a few grains of tannic acid, made up into a sort of soft pill.

She steadily followed the plan proposed, and at the end of two months had gained strength and flesh, and got rid of all her discomfort. The tannic acid was now used twice a-week only, but the pad was directed to be worn constantly. She still continues its use, and reports that the womb has never once come down, and that she has quite recovered her health and spirits, can walk out, and attend to her household duties, quite as well as before she became subject to the affection.—*Lancet, Jan.* 22, 1859, *p.* 81.

128.—EXTIRPATION OF AN INVERTED UTERUS BY ECRASEMENT.

By Dr. A. H. M'Clintock, one of the Presidents of the Dublin Obstetrical Society, Master of the Lying-in Hospital, &c.

[The case was that of a woman of two-and-twenty, tall, thin, and of anæmic aspect: for upwards of twelve months subject to profuse metrorrhagia. A pedunculated tumour was found low down in the vagina, its neck being embraced but not constricted by the thin os uteri. It was of a dark pink colour, and when scratched or abraded, blood was discharged. So far the case possessed all the characters of a polypus, but the history excited strong suspicion that the case was one of chronic inversion of the womb, as her symptoms dated back to her last confinement fourteen months ago, when under the care of a rude country midwife, and who probably used much violence in removing the placenta, as she says the cord was broken in the attempt, and the after-birth "twice slipped away from the nurse."]

Intending to remove the tumour with the écraseur should it prove to be a polypus, I drew it down beyond the labia by means of a vulsellum. This was effected without force, and with little annoyance to the patient. On passing the finger along the neck of the now extruded tumour, I found that the os was entirely effaced—not a trace of it could be detected; and that the vagina was perfectly continuous with the neck of the tumour at every point of its circumference, without any intervening ridge or projection, such as the os uteri would occasion. On replacing the tumour within the vagina, the os uteri again became developed, and could be distinctly felt in its former position. A bougie passed within it only a very short distance—not quite half an inch—and was arrested at this height all round. The result of these explorations led to the conclusion that there existed a chronic inversion of the womb. This opinion was subsequently concurred in by Dr. Johnson and Dr. Churchill, who were good enough, at my request, to see the case. On examining high up within the rectum (as suggested by Dr. Arnott), the uterus could be surmounted by the finger—at least, so thought Dr. Churchill and myself. Had this manœuvre been practised when the uterus was external, the indication would, doubtless, have been much more clear and satisfactory.

The case seemed in every way, as appeared to us, a favourable one for attempting manual reposition. The os uteri was relaxed, the inversion incomplete, the uterus itself small, and its substance admitted of being easily indented with the finger. Accordingly, on three different occasions—viz., on the 4th, 8th, and 13th October—the taxis was tried. In each of these attempts I endeavoured to effect the reduction of the misplaced organ in the following manner: The patient, having been chloroformed, was placed on her back at the edge of a bed, with her legs drawn up and separated. The hand was then introduced into the vagina, and firm compression and upward

pressure were simultaneously made upon the body of the uterus. This was a very fatiguing piece of manipulation, the hand very soon getting benumbed and powerless. During the brief intervals of relaxation, to allow the hand to recover its power, a steady pressure was maintained against the lowest part of the uterus, by means of a round piece of wood about eight inches long, with a shallow, cup-shaped extremity. The uterus could be very distinctly felt through the abdominal parietes, and my other hand was thus able to co-operate, by making regulated pressure above the pubes. The only effect upon the uterus of each of these operations was, for the time being, to reduce the size of the fundus and body; and this diminution seemed attributable rather to the simple effect of squeezing and compressing the organ, than to any replacement of its inverted portion.

On all these occasions I adopted the course of proceeding described by Professor White, of Buffalo, U. S., the report of whose surprisingly successful cases had just then reached me. On the evening previous to the first operation I applied extract of belladonna very freely to the os uteri, and some hours later she got an enema of starch and laudanum. This (first), operation lasted fifteen minutes. The patient exhibited such marked symptoms of prostration—pallor, coldness of the surface, failure of the pulse, vomiting, involuntary discharge of fæces, &c.—that it was deemed imprudent any longer to persevere. Drs. Churchill and Kidd were present during the operation, and Dr. Byrne, one of the assistants, who administered the chloroform on this and the two other occasions. The second and third attempts at at reduction respectively occupied twenty-five minutes, and each time I had to desist in consequence of the supervention of a state of prostration bordering on collapse. This did not quite pass away for some hours, but probably would not have lasted so long, if the patient had not obstinately refused to take any wine or brandy. Whether this alarming depression was in any way ascribable to the chloroform, I cannot take upon me to say. She certainly took a strong aversion to its inhalation, and it was with very great difficulty she could be induced to breathe it on the last occasion. In the intervals between the operations, the instrument already described was used night and morning for some minutes in pressing up the uterus. Beyond the temporary weakness just mentioned, and the occurrence of some hæmorrhage, no ill effects, strange to say, followed these manipulations.

Only one alternative now remained, and that was the removal of the misplaced portion of the womb. To effect this, there was a choice between the ligature, the knife or scissors, and the écraseur. I resolved to employ the first and the last; but was not quite decided how long to leave on the ligature before performing écrasement, whether for twenty-four or forty-eight hours. In conferring with Dr. Johnson upon this point, his opinion was, not to remove the ligature under forty-eight hours at least. This sound advice was strictly followed.

At morning visit of October 20, I passed a ligature of silk fishing-line, prepared in oil, round the neck of the uterus, by means of a Gooch's canula; and having drawn it moderately tight, fastened it. The top of the canula was just within the os uteri. Very considerable pain was complained of when this was done, and in the course of two hours it much increased, and she presented symptoms of general depression, with vomiting. By the aid of warmth and stimulants, reaction was brought about. A grain of morphia was given in pill, soon after which the pain began to abate. At 7 p.m. the pulse was 80, and she was quite free from pain or tenderness. The ligature was tightened, and she got half a grain of morphia and two of dried carbonate of soda. The next day she was going on satisfactorily, the pulse being quiet and no pain present; but she had at times some sickness of stomach, and at midday there was a slight return of the faintness. The ligature was drawn a little tighter. The uterus, as seen through the speculum, presents a dead white colour, having quite lost the deep pink which it presented before the operation. At forenoon visit of the 22nd the only change in her condition worth mentioning was, that the discharge from the vagina, though very small in quantity, was decidedly, and for the first time, fetid. This showed that strangulation had taken place, which might have been doubted from the colour of the uterus. The ligature had now been on for forty-eight hours; and, preparatory to using the écraseur, we urged her to inhale chloroform, but this she positively refused to do, declaring she would in preference suffer any amount of pain. Her endurance, however, was not put to a severe test. Drs. Churchill, Denham, and Byrne being present and assisting me, I very gently drew down the uterus with a vulsellum, until it appeared between the labia—just enough, in fact, to permit of our carrying the chain of the écraseur around it, and no more. She lay on the left side, with the thighs well flexed, and the handle of the instrument was directed backwards. The chain having been securely lodged in the sulcus made by the ligature, this and the canula were withdrawn. The écraseur (one of Charrière's) was worked very slowly, and eight minutes passed over before the uterus was severed. Pain of a severe, but not of a sharp or an acute kind, attended, but no hemorrhage of any amount. It was thought prudent to abstain from making any examination, and even from syringing the vagina. She was enjoined to observe the strictest bodily quietude, and one grain of acetate of morphia was given to her. To prevent even the slight exertion attendant upon voiding the urine, this was drawn off with the catheter for the next few days. At 2 o'clock she was easy; pulse 96; no hemorrhage. At 7 P.M. the pulse was 120; she complained of pain, and there was considerable tenderness in the hypogastric region; there had been no rigor, however. A turpentine epithem was applied to the belly, and she was ordered half a grain of calomel and the same of opium every third hour. She passed the night tranquilly, and in the morning

(23rd) the pulse had fallen to 104, the pain had nearly ceased, and there only remained some tenderness and some fulness above the pubes. There was a little discharge of a serous nature from the vagina. Her pills were continued for to-day, and she was allowed some cold chicken broth, as the stomach was irritable. Her pulse at visit next morning (24th) was down to 88, and, except for the presence of some sickness of stomach, she was in every respect improved. This gradually subsided. In the course of a few days all hypogastric tenderness and fulness were entirely removed. She was not permitted to get up for a fortnight, and she returned home the 2nd December, having greatly improved in health and strength since the operation.

This case very strikingly exhibits the necessity for caution and strict investigation in the diagnosis of uterine polypi. In *nine* of the cases collected by Dr. Forbes, the inverted uterus was mistaken for polypus. I do not believe that the ordinary digital or ocular examination would, in the instance before us, have suggested, even to the most skilful and experienced, the remotest suspicion of its true nature. Had the patient, from any motive, misstated the history of her case, or suppressed the fact of her having had a child, a grave error of diagnosis, and perhaps of practice, might have been committed. It is manifest also, from this and other cases which might be cited, that the characters of the tumour, as to size, colour, sensibility, and density, can very rarely be depended on to furnish positive information of its nature.

It has been stated in the foregoing history that when the uterus was drawn external, every trace of the os tincæ was obliterated, but reappeared when the organ was put back. That this actually took place was not only plain to myself, but to others who examined the patient, and among their number Dr. Johnson and Dr. Churchill. This circumstance is one worthy of notice, as bearing on diagnosis, although I am not aware that it has attracted attention before. I could not venture to say whether this sign is present in every case or not; but when it is present, we may safely regard it, I think, as a very unequivocal indication of the uterus being inverted.—*Dublin Quarterly Journal, Feb.* 1859, *p.* 137.

129.—ON OVARIOTOMY: WITH REMARKS ON THE MEANS OF DIMINISHING THE MORTALITY AFTER THE OPERATION.

By T. Spencer Wells, Esq., Lecturer on Surgery at the Grosvenor-place School of Medicine, Surgeon to the Samaritan Hospital, &c.

[The writer has long regarded the ligature on the peduncle, and the sloughing of the stump within the abdominal cavity, as one of the most frequent causes of death after ovariotomy.]

In cases where the peduncle is long, this danger can be avoided by

fixing the stump outside the wound; but where the peduncle is short, the écraseur offers evident advantages.

[Eight cases are detailed, which, though interesting, are too long for insertion here. Mr. Wells then proceeds to observe that we shall most effectually diminish the mortality after ovariotomy]

1. By the selection of proper cases only for operation.
2. By the determination of the stage of the disease in which the operation is most likely to prove successful.
3. By careful preparations to avoid all unnecessary sources of danger.
4. By the use of anæsthetics to lessen the risk of *shock*.
5. By certain precautions in the performance of the operation. And
6. By careful after-treatment.

1. As to the selection of cases. Without entering into the wide question of the diagnosis of ovarian tumours, it may not be quite unnecessary to say that the surgeon should be quite sure the tumour is ovarian before he determines to perform ovariotomy, when we remember that this operation has been attempted in cases of pregnancy, of hydatid tumours of the liver, of colloid disease of the peritoneum, of other malignant growths within the abdomen, of fibrous tumours of the uterus, of excessive fatty deposit in the integuments, of ascites, and in cases where there was no tumour whatever. The more glaring of these errors are not likely to be committed again; but with all our care there are cases in which doubts can only be entirely removed by an exploratory incision.

Then as to the characters of the tumour, I have no doubt that the surgeon who would only operate on cysts containg fluid which could easily be emptied, and if non-adherent, withdrawn through a very small incision, would be more successful than another surgeon who removed solid tumours requiring the long incision. But the cases I have related, and very many others on record, show that the presence of extensive adhesions and large solid masses are quite consistent with a successful result.

The cases in which the operation certainly ought not to be performed are those in which there is coexisting disease of some important organ. If all the patients who had died after ovariotomy from old standing diseases of the lungs or kidneys were eliminated from the catalogue, the results of the operation would appear in a far more favourable light. The operation is discredited because it has been performed in ill-selected cases.

There are those who believe that the existence of adhesions, so far from contra-indicating the operation, are rather favourable than otherwise, inasmuch as the peritoneum, in its altered character, is not so likely to take on an inflammatory action as when it is in a tolerably healthy condition. Many facts might be cited in favour of this view, and more against it; and it is one deserving of further inquiry.

2. As to the period for operation. There are surgeons who would only operate as a forlorn hope. when it is quite clear that the patient's days are numbered, and that if her life be shortened by the operation she cannot lose very much. Some, on the contrary, argue that this plan of operating *in extremis* has brought, and does bring, the operation into undeserved discredit; and that the less the general health of the patient has been shattered by the disease the more likely is she to survive a severe operation. To this it is replied that ovariotomy is an exception to the general rule, and that the most successful cases are those in which the patient has been most reduced by the disease, or the peritoneum most altered by extension. It is remarkable that in all the successful cases I have related, the disease was in a very advanced stage, while in the first fatal case it was in a much earlier period of development, and the general health comparatively little injured; but this point again requires more extended inquiry.

3. Patients have been exposed to unnecessary danger by being submitted to operation in a theatre, or in cold rooms, or in dry overheated rooms; or their limbs have been imperfectly covered and not protected from the fluid emptied from the cyst even after it has ceased. I have seen a patient's legs, thighs, and buttocks perfectly cold and wet from having been exposed for nearly an hour, uncovered, and lying on a sheet soaked with fluid. All this has been sufficiently insisted upon by Dr. Clay, Dr. F. Bird, and others, to render more than an allusion unnecessary.

4. *The use of Anæsthetics.*—The materials do not exist for a trustworthy comparison of the results of ovariotomy in cases where ether or chloroform were and were not administered. This is another question which can only be settled by future and more extended observation; but I firmly believe that the mortality *must be* diminished by the use of anæsthetics. The sickness which sometimes follows the use of chloroform is, of course, a great disadvantage, and the depressing effects might, in some cases, be too great; but, on the whole, I think, that by greatly lessening the anxious apprehension of suffering which so often brings patients into an unfavourable condition for undergoing any operation, and by entirely preventing the shock at the time of the operation caused by the pain, by the knowledge that the abdomen was laid open, and by the manipulations of the operator and assistants, the good effects of anæsthetics must far outweigh any occasional ill-consequences.

5. Supposing that all the necessary preparatory measures have been taken,—a quiet, well-ventilated room secured, a good nurse provided, a couch and mattress placed in a good light, the room warmed to about 70°, and the air kept from being too dry by a kettle of water boiling on the fire; the patient dressed in a warm flannel gown, and the legs kept warm by woollen stockings and hot-water cans, if needful; a good supply of soft, new, well-scalded sponge at hand; plenty of water at about 96°; soft flannel moistened in this water to protect

any exposed intestines; all the necessary instruments for incision, tapping, securing vessels and the peduncle, and uniting the wound; an abdominal bandage; and a clean warm bed ready to receive the patient; with chloroform, ether, wine and brandy;—there are still some points of practical importance which deserve notice.

[It is extremely important that the patient should not be exposed to any possible risk of putrid infection from students or surgeons engaged in the dissecting rooms.]

The *incision* should be exactly in the median line, so that integument and aponeurosis only need be divided before arriving at the peritoneum; it should not reach sufficiently near the pubes to endanger the gravitation of serum into the areolar tissue around the bladder and that of the pelvis generally, still less to endanger the bladder. Without running this risk, sufficient space can be often obtained below the umbilicus. If more be required, the incision can be carried upwards towards the ensiform cartilage, still in the median line, but with a curve round the umbilicus.

In case of any doubt as to the exact boundary of the cyst, it is far better to open it than to run any risk of unnecessarily detaching the peritoneum from the abdominal walls.

In cases where the cyst contains fluid it is well to use a large trocar, in order to save time; and to have an elastic tube attached to the canula, so that the fluid may be removed without wetting the patient, and while the abdomen is still covered.

This modification of the trocar is of some importance. Tapping the abdomen with an ordinary trocar is a very clumsy proceeding. It is necessary to have basins held up to the canula, and these, as they are filled, are emptied into pails, amid much splashing, and unnecessary exposure and wetting of the patient. In all cases of tapping the chest or abdomen, or opening large abscesses, I have, for several years past, been in the habit of using the canula of Schuh, of Vienna, and attaching an elastic tube to it, thus conveying the fluid away quietly and neatly without alarming the patient, or wetting her linen, while the entrance of air into the space occupied by the fluid evacuated is rendered impossible. More recently I have used a still simpler and equally convenient instrument, first described by Mr. Charles Thompson, of Westerham, in the Medical Times and Gazette of March 27, 1858.

The trocar is made to fit the canula closely, like the piston of a syringe; there is an opening from the lower part of the canula, on to which an elastic tube can be fastened; I have added a stop-cock to the elastic tube, a few inches from the canula, in order that the rate at which the fluid flows off may be regulated, should the patient suffer from its too rapid evacuation.

In ovariotomy the entrance of air into the sac is of no importance, and the mode of using this instrument is apparent; but in simple

tapping of ovarian cysts, as in evacuating fluid from the pleural or peritoneal cavities, or from the sac of large abscesses, it is of vital importance to prevent the entrance of air, and this may be done by drawing the piston back, placing the end of the elastic tube in a basin of water, and withdrawing the air from the tube and canula by suction, or by a syringe fitting the end of the canula. If the end of the tube be kept under water, and the piston be pushed forward, ready for use, the elastic tube is kept filled with water, which meets the fluid from the cyst when the operation has been commenced, and a syphon is formed. I think few surgeons who have once used this instrument, will ever use an ordinary trocar again for tapping either chest or abdomen.

In breaking down adhesions it is far safer to use the hand than the knife. Should any portion of adherent omentum or mesentery contain large vessels, these should be tied or twisted at once, to prevent bleeding into the peritoneal cavity, and as it might be very difficult to find the bleeding point if once separated. In case of firm, tough adhesions, the écraseur might prove very useful. Should there be adhesion to the intestines, or any viscus so firm that separation is very difficult, it might be better to cut away that portion of the cyst, leaving it adherent, than to run any risk of injuring an important organ; but in this case it would be desirable to remove the inner secreting coat of the cyst, if possible.

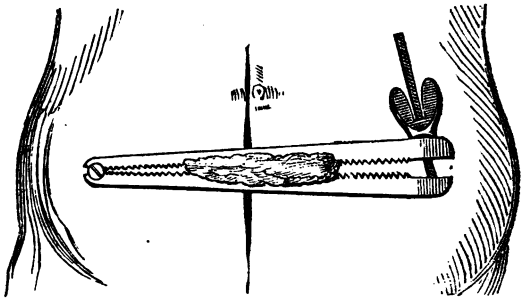
In drawing out the cyst caution is required that the cyst only is drawn out; and, in removing a solid tumour, care is necessary that it does not fall suddenly and tear through any portion of the peduncle, thus giving rise to hemorrhage.

In securing the peduncle ligatures were used in the first and second cases, clamps in all the others; but in the third and fourth these ligatures also became necessary, as in each case a portion of peduncle slipped from the grasp of the clamp. This danger, however, was avoided in the other cases, by taking care not to cut the cyst or tumour too close to the clamp, but leaving at least an inch projecting beyond the line of constriction. If ligatures be used, it should be remembered that a single one can very rarely be sufficient; and that cases are on record where patients have died on the table from a single ligature slipping, and it being afterwards impossible to find the bleeding vessels. The peduncle should be carefully transfixed, and tied in portions not broader than a finger. Perhaps it might be well to divide the round ligament with a knife, only tying the remainder of the peduncle; and I think it extremely probable that the écraseur may completely do away both with the ligature and the clamp; as it might be used very slowly, and the peduncle not entirely separated for some hours after the wound was closed.

The annexed wood-cut shows the manner in which the peduncle is embraced by the clamp, which lies across the wound, and prevents the sloughing stump from slipping into the abdominal cavity. In the

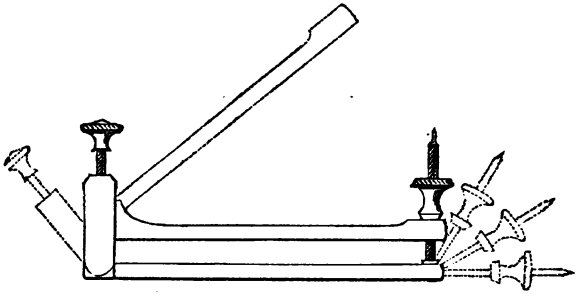
drawing this instrument is half the real size, so that the body, to be in proportion, should be half the life size. I used this clamp in Case

Fig. 1.



2, having it made like Ricord's fenestrated forceps for circumcision, with a screw for fixing. But it was not easy to apply, owing to the fixed stem; and as it was made of steel the rust which formed on it caused some irritation of the skin around the wound, although it was protected by lint. I therefore had an instrument made with a movable stem, and with two screws instead of one, in order to insure a more equable pressure on all parts of the peduncle; and it was

Fig. 2.



strongly gilded to prevent rusting. This clamp is represented in the above wood-cut, the dotted lines showing the manner in which the blade and stem are moved. I used this instrument in Case 3, and I have since had the screws made flat instead of round, as, when the surgeon's hands are bloody, it is not easy to turn the round screw. In Cases 6 and 7, I used the calliper clamp, as originally devised by

Mr. Hutchinson; but in Case 8 I returned to my own, and believe it to be that which is most readily applied, which makes the most equable pressure on the peduncle, and lies the most easily, of any I have seen, upon the wound afterwards. The secret of safety from hemorrhage, in using any clamp, is to leave a sufficient amount of tissue projecting to give security against retraction of divided tissue, or slipping of the clamp,—in other words, not to cut away the tumour too close to the clamp.

By carefully cleansing the peritoneum from all blood, clotted or otherwise, or any of the contents of the cysts which may have escaped, I think far more good is done by removing matter which would subsequently decompose, than harm by any irritation of the peritoneum with soft sponges. In this and previous stages of the operation the intestines should be kept as much as possible from protruding, by an assistant holding the edges of the wound together; and when intestine is exposed it should be protected by the warm moist flannel. Artificial serum has been used for this purpose instead of plain water, but I should certainly prefer the latter.

In cases where it can be done without undue traction upon the uterus, the fixing the stump of the peduncle outside the peritoneal cavity appears to be a most important safeguard against peritonitis, and the low fever caused by absorption of the putrid matter flowing from the decomposing stump. Any one who sees the quantity of filthy sanies surrounding the stump as it lies on the abdomen of a patient day after day before it separates, must be struck with the danger attendant on such a process going on within the abdomen, even though this diffusion were checked by protecting effusion of lymph. It remains for a statistical inquiry to show how far mortality has been diminished in cases where the new plan (first recommended, I believe, by Mr. Duffin) was adopted.

For bringing the edges of the wound together I think gilded harelip pins,—or pins of the *passive* iron-wire introduced by Dr. Simpson, —with the twisted suture, are the most trustworthy. The whole depth of the wound is brought together, and the pins act as splints, preventing any escape of intestine, an accident which has happened by the giving way of ordinary sutures. A few superficial sutures of silver, or iron-wire, may also be advisable to secure perfect apposition of the divided edges of skin. I have found cotton-wool the most comfortable covering for the wound; and as an abdominal belt, nothing answers better than a double fold of flannel, kept from slipping upwards by a strip of linen passing round each thigh, and pinned to the lower edges of the flannel. Experiments on dogs, rabbits, and guinea-pigs, have convinced me that it is better to perforate the divided edges of the peritoneum by the harelip pins, so as to press two folds of the peritoneum against each other, than to run any risk of contact of the peritoneum with the divided tissues of the abdominal parietes. But as I intend to make these experiments the subject of a special com-

munication to one of our learned societies, I merely state the result here for the information of other operators.

6. On careful nursing and judicious after-treatment a great share of success must depend. In many of the cases of ovariotomy reported, it seems perfectly wonderful that the patient has survived the after-treatment. Bleeding, leeches, blisters, calomel and purgatives, and starvation, have often been prescribed. Who can wonder at the death of the patient? The wonder is that so many have survived all this. The great objects appear to me to be to keep the patient perfectly quiet, free from pain, and thoroughly clean; the surgeon should not be led by the fact of the pulse being very rapid to fear peritonitis, and adopt active measures. It has seemed to me that the rapidity of the pulse is owing, in a great measure, to the return of the heart to its normal situation; but whether this be so or not it is certainly no ground for active measures. With the exception of opium, given with the precautions I have already indicated, I am disposed to attach far more importance to hygienic measures than to medicinal treatment. A well-ventilated room, warm, but not unpleasantly so to the patient, the air comfortably moist, and perfect quiet, seem to me to be the chief requisites. With the object of maintaining rest, the patient should not get up to pass water, but the catheter should be used every six hours. One good effect of the opium is to keep the bowels quiet, but if there be much flatulence I do not think it is well to keep up the state of constipation too long. I have never seen any good done by O'Beirne's tube in relieving flatulence. A little soda in peppermint water, or chloric ether with aromatic confection, seems to give as much comfort as anything; but this flatulence is always a troublesome symptom for some days. The intestines seem to miss their accustomed support or pressure. The application of warmth and moisture to the abdomen, by means of a warm linseed-meal poultice, is particularly grateful to the patient, and I feel disposed to regard it as of considerable importance in the after-treatment. As to food, I have not been disposed to urge it until there was a decided appetite, but to leave beef-tea, arrow-root, with or without wine or brandy rice-water, and barley-water, or a little tea and dry toast, with the nurse, to be given very much as the patient wished for them, and, after a few days, some solid food. The fetid stump I have kept covered by a muslin bag of peat-charcoal, changed once or twice a-day, in order that the patient might not be nauseated by the fetid odour which would otherwise proceed from it. I have not disturbed the wound until union was perfect: and if gilded pins or metallic sutures be used they may be left with safety for many days; though I believe the best plan is to remove the pins on the third or fourth day, leaving the superficial sutures three or four days longer. So soon as the patient is able to get about pretty well, country air is the best restorative.

It is said that by palliative treatment, by tapping, and by the

the injection of iodine, we have other means of relieving patients of ovarian disease, whereas the removal of the stone is the only means of relieving the calculous patient. I reply, that palliative treatment is of little avail—that tapping is in itself dangerous, even in the few cases to which it is applicable—and that, although injection of iodine is proved to be occasionally successful in those rare cases when the cyst is unilocular, yet its effects, even in these cases, are uncertain, and sometimes deadly.

An objection of far greater weight is the oft-repeated fact, that patients may live many years with ovarian disease, and die at last at a good old age. I answer, that it is no comfort to one woman dying of of ovarian disease, to tell her that another woman has lived for fifty years with a disease somewhat similar. We do not purpose to perform ovariotomy in a case where a woman, if left alone, would probably live in tolerable comfort for several years. We let *her* alone, and do the little we can to increase her comfort. The cases in which we incur the heavy responsibility of performing a dangerous operation, are those in which the patient *must* take her choice on the one hand, between the risk attendant on such an operation, with a hope of perfect cure if all go well; and, on the other, a life of suffering, to be terminated, at no distant date, by a miserable death. For in most cases it is a life of suffering, and great and constant suffering, mental and bodily; and death from the natural termination of the disease is one of the most trying we ever witness. All must acknowledge the truthfulness of the following picture, drawn by one of the ablest and most logical of the general opponents of ovariotomy. In the last edition of his lectures on the diseases of women, Dr. West, after describing a variety of painful symptoms under which women suffer in the earlier stages of ovarian disease, says (page 527), that as the end approaches we have "symptoms of the same kind as we see towards the close of every lingering disease, betokening the gradual failure, first of one power, then of another; the flickering of the taper, which as all can see, must soon go out. The appetite becomes more and more capricious, and at last no ingenuity of culinary skill can tempt it, while digestion fails even more rapidly, and the wasting body tells but too plainly how the little food nourishes still less and less. The pulse grows feebler, and the strength diminishes every day, and one by one each customary exertion is abandoned. At first the efforts made for the sake of the change which the sick so crave for are given up; then those for cleanliness; and lastly, those for comfort,—till at length one position is maintained all day long in spite of the cracking of the tender skin, it sufficing for the patient if in that, respiration can go on quietly, and she can suffer undisturbed. Weariness drives away sleep, or sleep brings no refreshing. The mind alone, amid the general decay, remains undisturbed; but it is not cheered by those illusory hopes which gild, though with a false brightness, the decline of the consumptive; for step by step death is felt to be

advancing; the patient watches his approach as keenly as we, often with acuter perception of his nearness. We come to the sick chamber day by day to be idle spectators of a sad ceremony, and leave it humbled by the consciousness of the narrow limits which circumscribe the resources of our art."

This picture drawn by Dr. West is true. We have all seen the poor creatures he so eloquently describes fading hopelessly away. But the resources of our art are not so limited as he would imply. We may be something more than idle spectators of a death-bed. We have a resource to offer,—hazardous it is true,—but one which has in many cases been crowned by a complete and brilliant success.

Some months ago I stood at one of these death-beds, in consultation with one of our highest authorities on ovarian disease. He was half convinced by my arguments in favour of an operation, but he felt his responsibility deeply, and said. "How dare I advise an operation we both know to be so dangerous?" I replied, "How dare you leave the poor woman to die without an effort to save her?"

These are the anxious doubts and grave responsibilities ever recurring in the life of practitioners of medicine and surgery. My earnest hope is, that by bringing this subject prominently forward for discussion, something may be done to solve the doubts and lighten the responsibility of those who seek for the "influence of authority in matters of opinion."—*Dublin Quarterly Journal, Nov.* 1859, *p.* 257.

130.—UNILOCULAR OVARIAN CYST—INJECTION WITH IODINE—SUCCESSFUL RESULT.

(Under the care of Dr. SAVAGE and SPENCER WELLS, Esq., at the Samaritian Hospital.)

[M. A. G. aged 56, widow, was at first an out-patient under the care of Dr. Priestley, who diagnosed a unilocular ovarian cyst, and reported the case as a very favourable one for injection of iodine. The tumour had apparently existed about two years.]

State on admission.—The whole abdomen from the pubes to about half way between umbilicus and ensiform cartilage was occupied by an elastic fluctuating smooth tumour, dull on percussion, the patient being about the size of a woman in the eighth month of pregnancy. Percussion clear in both lumbar and lateral lumbar regions. Uterus healthy. No depression of anterior wall of vagina. The pulse is small and weak, and the patient suffers a good deal from pain, and from the weight of the tumour and its interference with respiration.

A consultation was held, and it was agreed that Mr. Wells should tap the cyst, and if it proved to be unilocular inject it with iodine; while if it were multilocular he should perform ovariotomy.

April 12. As fluctuation was more distinct above than below the umbilicus, Mr. Wells inserted the trocar in the medium line, about

an inch above the umbilicus, using Dr. Graily Hewitt's canula fitted with an exploring sound passing through a diaphragm of india-rubber, so that the interior of the cyst could be explored without permitting the escape of fluid. The extremity of the sound was passed round all over the interior of the cyst; and as it appeared quite smooth and no smaller ingrowing cysts could be detected, the sound was withdrawn, and an elastic catheter introduced through the catheter, by which thirteen pints and a-half of clear straw-coloured fluid were evacuated. When the cyst was quite empty, an ounce of a caustic solution of iodine was injected through the catheter by means of a glass syringe with platinum nozzle, and the catheter and canula withdrawn, leaving the iodine in the cyst. One or two drops of iodine solution followed the canula.

Mr. Wells stated that in most of the cases recorded in which iodine had been injected into ovarian cysts, some 4, 6, or 8 ounces of the strong tincture had been used; and he attributed many of the subsequent ill-effects to the rapid absorption of so large a dose of alcohol. In two cases he had seen himself, he believed the patients suffered from the alcohol, and not from iodine, and he determined to follow the example set by Mr. Hutchinson recorded in the Medical Times and Gazette (vol. xvi. p. 602), and use an aqueous solution sufficiently strong to cauterise the secreting lining-membrane of the cyst, allowing for some unavoidable dilution by the fluid necessarily remaining in the cyst after it has been emptied as completely as possible. The solution used was made by dissolving a scruple of iodine and half a drachm of iodide of potassium in an ounce of water.

Not much pain was felt at the time, but it became very severe in about an hour all over the umbilical region. Two grains of solid opium were given at once, and a grain was ordered every four hours if the pain continued. She had a distinct rigor at night, followed by heat and perspiration.

[The report states that improvement took place. till at the end of three weeks she begged to sit up. Wine and quinine were daily administered. The cyst could be felt about the size of a cricket ball, lying centrally between the umbilicus and pubic.]

Remarks.—Since M. Boinet first practised the injection of ovarian cysts with iodine, the operation has been performed very frequently, both in the country and on the continent, and very considerable success has resulted. But there have been many deaths and many failures. The result of all this experience is leading us to the conclusion that failure *must* follow the injection of compound cysts, and that death *may be*. and often *is*, the result of a practice which is certainly forbidden by our knowledge of the structure and growth of these cysts. On the other hand, it appears that in all the successful cases the cyst was simple or unilocular, and that the success has been very considerable. Thus, of 45 cases reported by M. Boinet, in 34 the cysts

were simple. Of these 31 were cured and three died; while of 11 compound cysts so injected there were five failures and 6 deaths. Nothing can show more strongly the importance of a correct diagnosis; and Dr. Graily Hewitt's exploring trocar thus becomes of great use as a guide to successful treatment.

The apparatus necessarily consists of an ordinary canula and trocar, and a probe fourteen inches or more in length, graduated in inches, rounded at its extremity, and composed of a flexible metal. In the shoulder of the canula is transfixed a diaphragm of india-rubber, in the centre of which is a perforation, large enough to allow the trocar or the sound to pass, but grasping the sound so tightly as to prevent escape of fluid from the cavity into which it is introduced.

The trocar and canula are thrust into the tumour, as in the operation of paracentesis; the trocar is withdrawn, and the sound introduced in its place. The observer is now in a position leisurely, carefully, and conveniently to probe, by means of the sound, the whole of the abdominal cavity or cyst, and no fluid escapes during this examination.

Latterly a branch pipe has been added to the canula, fitted to an elastic tube or stopcock, so that the fluid may flow, if desired, while the sound is being used to explore the sac at different degrees of distension.

It may be well to add a few words as to the success of iodine injection to the practice of those who have followed M. Boinet. Dr. Simpson was the first to adopt it, and he is said to have done so in many cases with great success, but he has not published any numerical statement of the results. Dr. West has tried it in eight cases. Not one of these was fatal. In two there was no benefit derived. In one there was only slight improvement. In four the disease was clearly retarded, and in one it was cured, as at the end of two years fluid had not re-collected. In our fourteenth volume will be found a full abstract of a discussion on this subject at the French Academy of Medicine, where M. Velpeau stated that out of 139 instances in which iodine had been injected, 30 deaths had occurred; 64 were permanent cures; and in 36 the fluid re-accumulated. But it should be remembered that in 20 of these fatal cases, the opening into the cyst had been maintained by a tube kept through the wound; a detestable practice, leading almost certainly to cyst inflammation.—*Med. Times and Gaz., May* 28, 1859, *p.* 5498.

131.—ON OVARIOTOMY.

By J. Baker Brown, Esq.

[The following remarks were made by Mr. Brown after a paper read at the Medico-Chirurgical Society by Mr. Spencer Wells. Mr. Brown's remarks are so good and practical that we here append them, separate from Mr. Wells's paper.]

Mr. Baker Brown said that as he had devoted much time and attention, for nearly thirty years. to the study of ovarian disease, he trusted that he might be allowed to make some observations on the paper which had just been read. He regretted its length, because so little time was left for discussing many points of great practical interest; he should, therefore, be only able to notice a few parts of the paper. He thought the author had not sufficiently appreciated the advantages of the clamp as suggested by Mr. Hutchinson, as in his opinion this was one of the greatest improvements yet made for perfecting the operation. He could not understand how any vessels in the pedicle could have required tying, if a proper clamp had been carefully applied. He thought the author had not felt the importance of preventing the admission of air within the cavity of the peritoneum during the operation; this should be done by two assistants carefully covering the wound with warm wet flannels, so as to prevent both the extrusion of the intestines and the admission of the air. Th air in the room should be warm, not less than 66° to 70° Fahr.; and the same degree of temperature should be maintained for some days after the operation, so as to allow the skin to perspire freely. The author had made one strong recommendation which he (Mr. Brown) considered seriously objectionable,—namely, that the cut edges of the peritoneum should be caught by the sutures or pins employed in bringing the edges of the wound together. Now he as strongly advised all operators to avoid this recommendation; for he had found, in experiments upon the lower animals, that peritonitis immediately followed the use of metallic sutures when passed through the peritoneum; and as experience proved that no necessity existed for this novel mode of bringing the edges together, he (Mr. Brown) trusted that it would be found necessary only to apply sutures through the aponeurosis of the muscles, carefully avoiding any portion of the peritoneum, just as the operator for hare-lip carefully avoided the mucous membrane in applying the pins. He had found that deep sutures alone were necessary in this operation, and he recommended that the first suture should be applied close to the pedicle, secured by the clamp, and then at every half inch upwards. By this means the chance of air getting into the peritoneal cavity during the process of healing was prevented—a point of great practical importance, as he believed that as much danger arose from the irritation of the atmospheric air within the peritoneum as from the sloughing pedicle, when allowed to remain in the pelvic cavity. He (Mr. Brown) observed that the author had not yet felt the importance of giving the patient opium and wine an hour before the operation, yet this was a point of great value, especially when preceded and followed by the free sucking of ice. He differed from the author in recommending the use of opiate suppositories in preference to the administering of opium through the mouth. He (Mr. Brown) believed that if the pure opium of commerce, made into pills direct from the mass, be used, most patients

will be able to take opium who would not otherwise bear it; that suppositories were only required in exceptional cases, and then they were of real use. The author had mentioned one case where a band of adhesion extended from the cyst to the liver; these bands were peculiar, and required great care in dividing. Some years since, he (Mr. Brown) operated on a case in St. Mary's Hospital, where such a band existed, and after consultation with his colleagues, he cut through this band, which appeared to possess no bloodvessels, and yet this patient died two or three days afterwards, with all the symptoms of internal hemorrhage; and on a post mortem examination it was found that this band possessed two large bloodvessels, and from them the blood had flowed which destroyed the patient. In the very next case which he operated on in private practice, the same kind of band was found, and being torn through, no bleeding followed. This led to the conclusion that all adhesions should be torn through, and never cut. The question of adhesions in this disease was one which had led many to consider their existence as opposed to the completion of the operation. He (Mr. Brown) believed, and he was borne out by the great experience of Dr. Clay, that they offered no objection to the operation; indeed, it was doubtful if the peritoneum had not been so thoroughly altered from its normal character as to be less prone to inflammation on that very account. In the second case described by the author, the adhesions were unusually many and strong, and offered such difficulties that most young operators would have been deterred from attempting to break them down; yet this very case did well. On the contrary, had the operation not been completed, there is little doubt she would have died from suppuration and formation of pus within the abdomen. The author alluded to the assistance which he (Mr. Brown) had given in this very operation, and had spoken of his zealous services. He (Mr. Brown) felt very strongly that the words efficient services would have been more appropriately used. Upon the general question of ovariotomy, Mr. Brown felt that a correct diagnosis was of the first and most vital importance. When the nature and character of the case was carefully made out, then the surgeon could decide on the different modes of treatment to be followed, but not till then. Supposing that extirpation was decided on, then the sooner an operation was performed the greater would be the chances of success: in fact, the history of the operation for hernia well illustrated this part of the subject. Formerly that operation was never performed till the patient was in extreme danger and unable to bear the shock; and if the patient did live for twelve hours, the usual black or aperient dose the next morning so irritated the bowel that death rapidly followed. Whereas now, by earlier operation and the use of opium afterwards, these cases were as successful as they were formerly the contrary. In ovariotomy, a careful after-treatment is of as much importance as a correct diagnosis.—*Laucet, Feb.* 19, 1859, *p.* 187.

132.—ON PUERPERAL CONVULSIONS.

By Dr. FRANCIS H. RAMSBOTHAM, Obstetric Physician to the London Hospital, &c.

[On Monday, February 7, Dr. Ramsbotham was sent for by Mr. Pryce, of Walworth, to a patient pregnant for the first time, between six and seven months. She was stout and plethoric, and for six weeks previously had complained of drowsiness, puffy hands, and other similar symptoms. On the day previously, convulsions came on, preceded by a violent attack of vomiting and purging. The fits recurred very frequently through the night, and when seen by Dr. Ramsbotham she was quite unconscious, with widely dilated pupils, acting sluggishly to the stimulus of light.]

The uterus occasionally became hard, and there seemed to be a disposition for the commencement of premature labour. She had been bled twice during the night, loosing about thirty ounces of blood at the two operations; and in the day had been cupped on the back of the neck, and twelve leeches had been applied to her temples. The hair had been cut off, ice was applied to the head, and a turpentine enema had been administered, which had brought away a large quantity of fœtid stools. I had some difficulty in reaching the os uteri with my finger, for it was very high, and inclined more than usually backwards. It was dilated to the size of a sixpence, just admitting the end of the finger, and the membranes were felt tense. Before withdrawing my hand I ruptured the membranes, and gave exit to a considerable discharge of liquor amnii; I then felt a limb, but could not make out which. Her size was gradually diminished. She had no more fits while I stayed in the house. I recommended that as long as she remained unconscious three grains of calomel should be placed on her tongue every two hours, in the hope of its passing into the stomach; and that another turpentine enema should be injected. There were only two more fits after I left; labour pains supervened, and she was delivered at 2 a.m. (Tuesday); the knees presenting. Her consciousness gradually returned soon after delivery; though headache continued. On Saturday, the 12th, Mr. Pryce wrote to me, that he had seen her that morning sitting up, after a refreshing sleep of five hours; that she still complained of her head, and felt relief from the cold application. The lochia after delivery were very scanty; she took ten grains of calomel, and for two days the sphincters performed their duty imperfectly. It is remarkable that she has no recollection whatever of anything that occurred for six days before the attack appeared, although she was following her ordinary occupation all the time; and except for the headache and drowsiness seemed as usual. No albumen could be detected in the urine. She is now convalescent.

Holding the opinion, as I do, that an attack of puerperal convulsions is merely a modification of cerebral apoplexy, I consider that

this young woman's life was saved by the prompt and decisive bleeding. But I should not have detailed the case, were it not for one extraofdinary feature that it displayed, and which I have before observed on no few similar occasions, I mean, the entire loss of memory in regard to the occurrences of some days antecedent to the seizure; while the patient appeared in health, and was occupied in her ordinary duties. I have before known this *obliviscence* extend to six days preceding the first fit, all which time, in the language of my father, who first, I believe, pointed out this peculiarity, seemed a blank in the patient's existence. Injuries to the brain occasioned by other causes have been followed also by the same loss of consciousness of events that happened before the accident occurred. M. Koëmpfen, in vol. iii. of the Royale Académie de Médicine, gives the case of a cavalry officer, who fell from his horse on his head. A total want of recollection came over him of everything that occurred on the day previous to the accident, as well as for some hours after it. Though he recovered perfectly, he never regained his memory of these periods. A medical friend of mine, since dead, was thrown from his horse one morning at ten o'clock, while returning from a patient's house. On being brought home he ordered appropriate medicine for his patient; and though he remained in his house, he appeared to his family to be quite conscious of everything that was going on around him. When he was well he told me that he had forgotten how the accident took place; and that he had no recollection of going to see his patient, nor of anything that had happened since seven o'clock that morning; the last thing he remembered was a child dying in his arms at that time, to which he had been called up two or three hours previously. He was equally forgetful of every occurrence that happened for twenty-four hours after his fall; although during the whole of that time he was conversiug free and rationally with different members of his family, and also with his medical friend who had been called in on the emergency. Sir C. Brodie, (Psychology, Eng. 1855, p. 58,) mentions the case of a young gentleman who was thrown from his horse while hunting. He was stunned, but only for a few minutes, and rode home in company with his friends twelve or thirteen miles, talking with them as usual. On the following day he had forgotten not only the accident, but all that happened afterwards. He gives another, iu the person of the royal groom, who while cleaning a horse, was kicked by him on the head. He did not fall, nor was he stunned or insensible; but he quite forgot what he was doing at the moment the blow was inflicted. "There was an interval of time as it were blotted out of his recollection."

In the Penzance Gazette, February 14, 1844, there is the instance of a woman who hanged herself, but was cut down before life was extinct. After her recovery she had no recollection of having attempted to destroy herself; nor did she remember anything that occurred on the previous day. And in the Times for July 4, 1845,

there is an account of a youth who was charged with attempting to destroy himself by hanging, and who denied having any recollection of having made such an attempt. I have no doubt that his forgetfulness was not feigned. I attended a woman through a very severe attack of puerperal convulsions, who when I saw her a month after, had completely forgotten how to write, though she wrote very well before. She could not make a letter without having a copy before her; and when she tried she looked exactly like a child beginning to learn. Brodie also, *ut supra*, gives an instance of a gentlemen, who after a fever had forgotten how to read; of another who, having recovered from an attack of apoplexy, was unable to understand oral language or to converse, though he could read as well as ever.

These instances, in my opinion, would go far to establish the truth of the doctrine, that different parts of the brain are subservient to different passions, emotions, and other attributes; for it seems clear that in all of them, whatever other portions of the organ might have received injury, that particular locality, wherein is situated the seat of memory, was more than any other disturbed in the performance of its functions.—*Med. Times and Gazette, March 5*, 1859, *p.* 233.

133.—REMARKS ON THE INTERNAL EXHIBITION OF TURPENTINE IN NEURALGIA AND PUERPERAL DISEASES.

By Dr. GONDOUIN.

Hitherto essential oil of turpentine has seldom been used in France, except for the purpose of counter-irritation, and chiefly ranked among the resources of veterinary medicine. Internally the syrup was prescribed, or the essential oil solidified by some process, the object being to modify, by the substituting method, the condition of mucous membranes in a state of chronic inflammation, attended with excessive secretion. Thus turpentine was exhibited for chronic bronchitis with abundant bronchorrhœa, and in old cases of gonorrhœa, in which the disease had extended to the mucous lining of the bladder, ureters, or kidneys. In the early stages of consumption, M. Trousseau had found turpentine particularly beneficial; not that he expected by its use to modify the morbid deposit in the lung, but with a view to the removal of the phlogosis, which almost invariably, at least in a latent manner, accompanies its formation. The Professor is still in the habit of prescribing to consumptive patients the syrup of turpentine, in doses of 1 to 2 ounces daily.

Our readers are also aware that M. Trousseau, for some years, has recommended in obstinate cases of sciatica, the following enema:—

℞. Ol ess. terebinth., 2½ dr.; vitelli ovi., N. 1; aquæ, 3½ oz.; laudan. liq. syd., 26 m.

Make the oil into an emulsion with the yolk of the egg, add the

water gradually, and finally the laudanum. This mixture should be divided into two parts, one of which is injected in the morning, the other at night. A simple enema of warm water should first be taken, and when it has been returned, the emulsion should be injected in as little water as possible. The treatment must be continued for several days, or a relapse is to be feared.

In England, however, turpentine has been applied to more important uses, and M. Trousseau now prescribes it, according to the precepts laid down by Dr. Graves, of Dublin, with much benefit to women suffering from puerperal symptoms. The extreme gravity of the phlegmasiæ consequent upon parturition, due precisely to their tendency to suppuration, is a well-known fact; whether the inflammation is limited to the peritoneum, extends to the subjacent cellular texture, or spreads to that in which the iliacus internus and psoas muscles are imbedded, the anxiety these symptoms occasion is the same. In these various circumstances, unconnected, of course, with epidemic influence, against which the resources of science are generally unavailing, M. Trousseau has derived advantage from the exhibition of large doses of turpentine, in combination with opium. Under the influence of this treatment feverishness yields, the pulse loses its frequency and becomes fuller, the abdominal pains and tenderness decrease, and finally, secondary suppuration is less common. If at the period of the admission of the patients into hospital, the feverishness has already abated, and abscesses have formed, the Professor still perseveres in the use of the same medicine, under the impression that it will conquer the inflammation which still lingers around the abscesses. With regard to purulent collections, they disappear, it is true, very seldom indeed; but after a time, and therefore with little peril to the patient, they open either in the intestine, or the bladder, if they are situated beneath the peritoneum; or generally in the inguinal region, if they occupied the sheath of the psoas, or iliacus muscles.

We are unable to point out the precise mode of action of turpentine in these various instances. Its administration, in such cases, is altogether empirical, and Dr. Graves and M. Trousseau recommend it much in the same manner, and without any more distinct motive, in those erratic forms of neuralgia specially observable in women, which cannot be satisfactorily traced to any particular cause or to any anatomical change.

Last year, Dr. Bonfils noted in M. Trousseau's wards, and recorded in the Bulletin de Thérapeutique two interesting cases of puerperal peritonitis, which were speedily checked by this treatment. The first of these patients was, concomitantly with peritonitis, affected with pleuro-pneumonia on both sides of the chest; and in spite of this dangerous complication, she recovered in the space of seven weeks. The second case had a less fortunate issue, but the puerperal symptoms had completely yielded, when morbid manifestations of a different nature made their appearance, and she was carried off, in all pro-

tability, by a putrid disease. In both these instances the medication was instituted as follows:—

In the first case, opium was prescribed in pills, and turpentine in enemas. Five pills, of one-sixth of a grain each, were at first taken during the day; the dose was then increased to eight, and finally to ten pills daily, opium being continued during thirteen days. The dose of the turpentine was at first 2½ dr. for two enemas, one in the morning, the other at night. The quantity of turpentine was then gradually augmented to 5 dr., 6½ dr., and 8 dr., and the latter dose was persevered in for a fortnight. The formula for two enemas was the following:—

R. Ol. ess. terebinth 2½, 5, 6½, 8 dr.; vitelli ovi N. 1; aquæ 3¼ oz.

Add to each injection five or six tablespoonfuls of decoct. radicis althæ, or of the infusum lini. The enema to be retained as long as possible.

In the second case, five-sixths of a grain of opium were also exhibited in pills during three days. The turpentine was swallowed in lichen capsules, each containing 15 gr. of the essential oil. The patient took six every day—two in the morning, two at noon, and two at night.

Quite recently, in a case of erratic pains in the appendages of the womb, in a young woman whose catamenial periods were irregular, M. Trousseau prescribed the following emulsion, to be taken in four doses in the course of the day:

R. Ol. essent. terebinth 1¼ dr.; vitelli ovi ½; syr. cort. aurant. 10 dr.; aq. melissæ 2½ oz. F. S. A.

Thus administered, turpentine preserves a most unpleasant taste, and in private practice it is more conveniently exhibited in small gelatinous capsules of the size of an olive, which open and close like a needle-case. They are not expensive, and have the further advantage of being easily filled by the patient immediately before being swallowed, one by one, in a spoonful of water, in the course of the day.

It has been remarked, that these gelatinous capsules are open to the objection of placing the essence in immediate contact with the coats of the stomach, and of causing thereby a certain amount of discomfort to that viscus when the protecting sheath breaks. Some practitioners prefer, therefore, to dilute the essence in some appropriate excipient—a method which is supposed to render the action of the medicine more general, and milder. For this purpose M. Perrens, Secretary-General of the Society of Pharmacy of Bordeaux, has proposed, in the Union Médicale de la Gironde, to disguise the nauseous flavour of the turpentine by the addition of oil of peppermint. 3 m. of this oil, mixed with ½ oz. of turpentine, render the latter quite unpalatable. M. Perrens recommends the following formula:—

R. Vitelli ovi No. 1; ol. ess. terebinth. ½ oz.; ol. ess. menth. pip. 15 gr.; syrupi 1 oz.; aq. destill. minth. 3 oz. M. F. S. A.

In the case of very impressible women, who might not be able to overcome their reluctance to the above mixture, the turpentine may be prescribed in an electuary, and the following M. Perrens considers a satisfactory combination:—

℞. Ol. ess. terebinth. 2 gr.; tragacanthæ 10 dr.; sacchari pulv. 5 dr.; syrupi q. s.

Prepare a semi-fluid electuary, two teaspoonfuls of which may be taken in a wafer impregnated with strong peppermint water.

We should, however, remark that, when turpentine is exhibited, as it is by Professor Trousseau, in capsules, followed, if necessary, by one or two drops of laudanum, it seldom causes any serious disturbance of the digestive functions. Appetite, it is true, sometimes diminishes, and some unavoidable nausea may be experienced, but the stomach soon, in most instances, becomes familiarized with the medicine, and the epigastric heat and cerebral excitement produced by the first doses of turpentine soon disappear altogether.—*Dublin Hospital Gazette, May* 1, 1859, *p.* 139.

134.—ON A CASE OF INFANTILE SYPHILIS, WITH REMARKS.

By Dr. T. H. Tanner,

(Being an abstract of a paper read before the Obstetrical Society, London.)

The author commenced by observing that amongst the diseases which may be propagated from parent to offspring, few are more disastrous in their results than constitutional syphilis. It is probable that the syphilitic poison is the direct cause of the greatest number of abortions and premature labours which occur in the present day; and that even when it fails to destroy fœtal life at an early period of gestation, it induces other severe disorders, having a fatal tendency at a more or less remote period. The chief points of interest in the case then related are the following:

In August, 1851, a married lady was delivered of her first child, which was strong and healthy, and has since continued to be so. Soon after her labour the husband contracted a syphilitic sore from a prostitute, for which he put himself under the care of an eminent surgeon. He took mercury, and was salivated; but two months after an apparent cure he became affected with secondary symptoms, for which he again took mercury. Being nervous as to the consequences, he did not have intercourse with his wife until after the lapse of nine months from the date of his being primarily affected. At the commencement of 1853, the wife's health began to suffer, though not very materially; but on the 12th June of the same year she was delivered at the seventh month of gestation of a still-born child. Some months afterwards her health began more decidedly to fail; spots appeared on her

skin; she had a sore throat, and her hair came off. In May, 1854, she gave birth to her third child; it was dead, and she fancied she had not gone more than six months and a half with it. In the November of the same year she aborted at the third month. In August, 1855, she had a child born dead at the sixth month; and in October, 1856, she was delivered at the eighth month of pregnancy of another dead child.

In March, 1858, she first became a patient of Dr. Tanner, and was then put upon a course of bichloride of mercury for three months. On the 4th of last September she was delivered of a seemingly healthy live child; the labour took place some three weeks before its proper time. The infant only remained well about a fortnight, when it manifested all the symptoms due to constitutional syphilis. The treatment consisted in the inunction of mercurial ointment, no medicine of any kind being given by the mouth. In a month the child was apparently well in every respect, so that all medical treatment was discontinued; but a fortnight afterwards it died suddenly. At the post-mortem examination, every organ was found healthy, the brain, lungs, thymus gland, heart, &c., all presenting a perfectly natural appearance. The only change was in the blood, which seemed to be more watery than it ought to be.—*Lancet, June* 11, 1859, *p.* 586.

135.—ON THE TREATMENT OF CARCINOMA UTERI.

By Dr. J. Y. Simpson, Professor of Medicine and Midwifery in the University of Edinburgh.

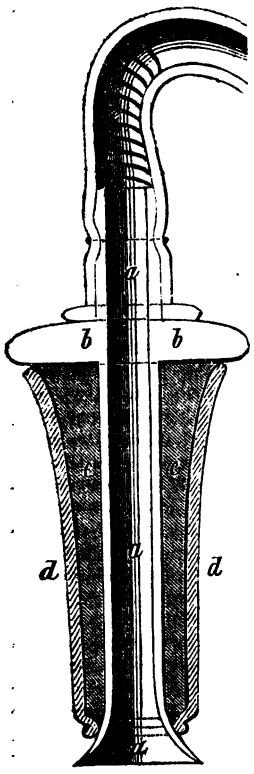
In the way of the constitutional treatment of uterine as of other forms of cancer, we can do nothing or almost nothing, except, perhaps, retard and alleviate the course and the effects of the malady. Nearly every form of mineral and nearly every form of vegetable remedy has been exhibited and tried which seemed at all likely to stay the progress of the malady, but as yet with little, or indeed with absolutely no success whatever. All that we can do constitutionally is to keep the patient as near the standard of health as possible by generous diet, by invigorating regimen, and by tonic medicines, and thus enable her to bear up against the debilitating and destructive march of the disease.

But we can employ various measures which are of more or less avail to stay and stem, at least, the local symptoms and sufferings, and smooth the patient's progress to the grave.

With this view, we have three leading indications to attend to, viz., 1. To use means to alleviate the pains and sufferings attendant upon the disease; 2. To use means to prevent and arrest the attendant menorrhagia; and 3. To use means to counteract the offensiveness and acridity of the attendant discharges. Let us first consider the

1. *Measures calculated to palliate the attendant pains.*—To relieve the pain you must learn to administer opium by the stomach or rectum, or to apply it locally to the uterus, according as you find the patient can best bear it. Begin it always in small doses. Most women suffering from this or from other painful forms of malignant disease, become, as it were, opium-eaters; and I think it is our duty to teach them how to keep themselves as easy and comfortable as possible, whether the object be best attained by the use of opium or in any other way. It is certainly our duty to alleviate, when it is beyond our power to cure. Where opium disagrees with a patient, you must have recourse to some other anodyne drug. You will find that conium has been much employed and recommended by some authorities, who have supposed it not only to be of use in relieving the pain, but to have some specific power of checking the progress of cancer. I have never been able to satisfy myself of the existence of this power; but I believe it to be a very good sedative. So also are belladonna, lupuline, stramonium, and Indian hemp, in some exceptional instances. Besides being used by the mouth, most of these anodynes may, if it be deemed better, be administered by the rectum in the form of a suppository, or applied to the cervix uteri in the form of a medicated pessary. By this term of "medicated pessary," I mean, as most of you know, small balls of a round or ovoid form, and of the size of a walnut, made of some medicinal substance mixed up with ointment, and brought to a proper degree of consistence by the addition of yellow wax. Our Edinburgh druggists keep medicated pessaries of various kinds, containing morphia, belladonna, tannin, &c. The patient can usually introduce them herself, and they have the advantage over injections and lotions of applying the medicinal agent in a more continuous form. They are made of such a consistence as to dissolve gradually in the vagina at the temperature of the body. Generally they are coated with a layer of ointment made firmer from containing a larger proportion of wax, with the view of facilitating their introduction.

We have other local sedatives in the vapour of chloroform, and in carbonic acid gas, which may be used to supplement the action of these anodyne remedies, or to supplant them entirely where some idiosyncrasy prevents their use. The carbonic acid has been chiefly employed here within the last few years, and I imagined for a time that this application of it was something new and modern. But I may as well warn you, that should any one of you imagine that he has made a discovery of something practical in medicine, if he will take the trouble carefully to look over the works of Hippocrates, or Galen, or Paul of Ægina, or of some other ancient medical writer, he will very probably get all the glory taken out of him. When the ancient Greek and Roman physicians burnt various herbs, the fumes from which were conducted by a tube to the os uteri in cases of uterine pains, ulcers, &c., they in reality applied carbonic acid gas. In Ger-



Section of the perforated cork used in the local application of carbonic acid gas to the uterus. *a a* Metallic tube passing through the centre of the cork, and receiving the gas at its wide extremity *a*. *b b* Metallic ring, in which the metallic tube is fixed. *c c* The perforated cork, sheathed by a layer of caoutchouc, *d*. *e* A coil of wire in the commencement of the india-rubber tubing, to prevent it from collapsing at the point of flexion: the metallic tube may be prolonged and bent, and in this case the coil of wire can be dispensed with.

many the waters of some of the baths, such as those of Marienbad and Nauheim, have long been used as local sedatives to the uterus. and these waters contain always a proportion of free carbonic acid. Dr. Dewees, a distinguished American author, also speaks of having used the pure gas in this way as a sedative for the pains of carcinoma uteri. My attention was first called to the subject by a paragraph in one edition of Dr. Pereira's "Materia Medica;" but Dr. Pereira himself considered this paragraph of so little importance that he expunged it from the last edition of his work. The paragraph was to the effect that his friend, Dr. Clutterbuck, had been requested by a lady suffering from uterine pain and irritation, to be supplied with some means of applying carbonic acid gas to the womb, as she had formerly experienced great benefit from such an application at the hand of an Italian physician. Latterly, I have used it extensively in many cases of uterine pain, and in some with excellent effect; for it is, in fact, a good and powerful local anæsthetic. The application is very easily accomplished. A tablespoonful of crystallised tartaric acid is mixed with a tablespoonful of crystallised bicarbonate of soda in an ordinary wine-bottle, three or four wine-glassfuls of water are added, and the gas which is evolved is carried off through a caoutchouc tube, and applied to the womb by means of a gum-elastic nozzle attached to the extremity of the tube. Our chemists have got into the way of supplying patients with boxes such as that I have beside me, containing twelve powders or packets, with six drachms of tartaric acid in each, and other twelve with an ounce of bicarbonate of soda. They furnish them also with the appropriate tubes, which, let me add, are sometimes provided with a sort of brass box immediately above the cock or stopper to hold pieces of sponge, and by pouring on these sponges some chloroform, you may have the combined sedative

action of the two anæsthetics. Usually, however, the hollow cork and tube used are simple, (see Fig.) and without any box; and if you wish to apply chloroform vapour along with carbonic acid, you require when employing the simple tube, to add merely a teaspoonful of chloroform to the contents of the bottle before introducing the cork. When the tube is introduced into the vagina, after the evolution of carbonic acid gas has commenced, there is perceived first of all a rush, and a slight feeling of heat; by-and-by a soothing effect is produced. Besides its anæsthetic properties, carbonic acid is one of the best of local curative applications that can be made to an ulcer. In the last century, Dr. Ewart, of Bath, made the experiment of applying this gas to two open cancers of the breast constantly and for a considerable time, and with this good result, that one healed up completely, though of course only temporarily; and in the other the pain was relieved and the ulcer partially healed. When carbonic acid fails to relieve the pain, the vapour of chloroform may be superadded to it in the manner I have indicated: or chloroform vapour by itself may be applied by means of an ordinary Higginson's (barrel) syringe, which, let me add, is the cheapest, best, and most convenient of all syringes for all purposes. The long or free extremity of the syringe is introduced into the vagina, and the other end of the instrument is inserted into the mouth of a four or six-ounce bottle, about one-third or one-half filled with chloroform, and then the application of the fingers to the middle part or barrel being in the way of alternate compression and relaxation of the barrel, sends speedily a current through the apparatus. If the bottle were full, or nearly so, there would be a risk of the liquid chloroform getting into the instrument, and being pumped into the vagina, which it would blister and scald, and thus produce an effect quite the opposite of that which is desired. After the tube has been introduced into the vagina, by working the barrel in the ordinary manner, the vapour of the chloroform rises into the instrument, and may be projected for any length of time against the uterus: for you can send through the instrument a current of air or vapour as easily as a current of liquid. Applied in this manner to mucous surfaces generally chloroform vapour has a very soothing and sedative effect. Ten minutes usually suffice for the application at one time either of carbonic acid gas, or the vapour of chloroform; but patients sometimes desire it to be continued longer. Either of them, or both, may be repeated, if necessary, many times a-day.

I would just add one other remark in regard to chloroform, as a supplement to my observations on the constitutional, as contrasted with the local sedative treatment, of the pain which attends a cancer of the womb, and it is this, that where opium disagrees with the patient, or where she requires such large doses that she is deterred from using it, you may relieve the pain by bringing her occasionally under the general anæsthetic influence of chloroform, by inhaling small quantities from time to time, and thus you may occasionally

procure for her a rest and a respite from her suffering, more easily and completely than by any of the usual forms of anodynes. I have seen chloroform, when swallowed, also answer well for a time as a general sedative in cases of cancer. One of the best modes of exhibiting it, is by making a mixture of chloroform with compound tincture of cardamoms, in the proportion of five or ten drops of chloroform to each drachm of the tincture. A teaspoonful of the solution or mixture may be given in a wineglassful of water several times a-day, or whenever the pain becomes severe. Laudanum or solution of morphia may be added to this mixture in appropriate doses, if you wish to combine it with an opiate. Remember to order the dose of the solution of chloroform in the tincture of cardamoms to be added to and stirred up with the wineglassful of water; for, if you reverse this, and add the water to the mixture, part of the chloroform is generally separated and precipitated.

There is another means by which you may sometimes succeed in alleviating the pain of cancer. I allude to the application to the part of some freezing mixture. Dr. J. Arnott, who has directed particular attention to the anæsthetic effects of a low temperature to various parts of the body, has suggested that the freezing of a cancerous part may be of use not only for soothing pain, but also as a means of curing the disease. And when the first experiments began to be made with it, some cases of temporary cure were reported, just as in the last century, Ewart and others met with partial and temporary healing of open cancer of the mamma from the continued application of carbonic acid gas. We had a patient with ulcerated carcinoma of the cervix uteri in the hospital a few years ago, whom we treated by the occasional application of freezing mixtures to the os. These generally relieved her pain, and seemed to check the discharge, and make the ulcer partially contract and heal up for a time. But ulceration soon set in again, and the condition of the patient speedily got as bad as before. Yet possibly the application of a refrigerating mixture might prove a useful adjunct to our means of treatment, and might be much more frequently and regularly employed if we could get over the one great objection to its use which lies in the difficulty of its application. At present the method employed is to introduce a speculum into the vagina, and through this to apply to the os uteri, in a muslin bag, a freezing mixture. The mixture most commonly employed consists of two parts of ice to one of common salt. The ice must be pounded or bruised, and when thoroughly mixed up with salt in the proportion I have just stated, and applied in a muslin bag to a part for a certain length of time, the circulation there is stopped, and the part becomes cold, pale, and insensible. This condition remains for a short while after the removal of the bag, and then the parts gradually return to their previous condition. Perhaps some simpler and more manageable method of applying great cold may yet be devised, and if this do happen, it may prove a valuable boon. For we know

that the application of ice, or, to speak more correctly, of a temperature at or below the freezing point, to other parts of the body, has the effect of temporarily alleviating pain, or temporarily inducing an insensibility during which some of the slighter surgical operations can be performed without causing any pain to the patient. Thus I have lately seen two gentlemen have each several teeth extracted without pain, from having their gums previously frozen. One of these gentlemen, my friend Dr. Small, from whom seven teeth were extracted after a stream of water of a temperature of from 10° to 20 Fahrenheit had been for some time allowed to pass through a thin metallic box accurately fitted to his gums, certainly made very wry faces during the operation; but he explained afterwards, that the contortions of his countenance were not excited by pain, but by the mortal terror he was in at every application of the forceps, lest the "grunch" which he distinctly felt would be accompanied by pain. If, I repeat, we had some simpler means of freezing the os uteri and other parts affected with cancer more easily, we should more frequently perhaps have recourse to this expedient. As yet our only means are only a source of irksomeness to the patient and of difficulty to the practitioner. It has always seemed to me that solid carbonic acid applied in a caoutchouc bag, or otherwise, and mixed perhaps with ether, ought to be the most convenient and best freezing agent for producing local anæsthesia in the practice alike of the dentist, the surgeon, and the accoucheur, and that we may find some easy means of applying this to the os uteri; but I have not yet been able to obtain the acid in the solid state, so as to have an opportunity of reducing the theory to practice. Patients with cancer of the uterus will often require your medical care for other forms of distress and suffering than the mere local uterine pain connected with the disease. They have sometimes their sufferings aggravated by a tendency to constipation, particularly when they first begin to use opium, which is kept up in the later stages by mechanical obstruction of the bowel from the spread of the carcinomatous deposit. Gentle aperients, or what often serves better still, mild enemata, are required under these circumstances. In the same way the bladder is apt to be irritated during the progress of the deposit, and you will find it occasionally necessary to relieve the symptoms of dysuria with infusions of uva ursi, buchu, &c., and with the addition of alkalies or acids, as indicated by the condition of the urine. Besides the secondary or sympathetic pains which may spring up in different parts, and of which I have already told you, occasionally demand for their alleviation local anodyne liniments or plasters, or even the injection of a few drops of the watery solution of morphia into the subcutaneous cellular tissue of the affected part. Occasionally you will find that they will disappear after the application to the ulcerated surface of the cancerous uterus of slight caustics or sedatives, such as a solution of nitrate of silver, acid nitrate of mercury, and the like.

2. *Measures calculated to arrest the attendant Hemorrhages.*—But there are other indications which require to be fulfilled besides that of the alleviation of pain. Thus you will sometimes be called upon to check and counteract the hemorrhage which occasionally occurs to an excessive and exhausting extent in cauliflower excrescences, and other malignant diseases of the cervix uteri. In these cases you have large, tortuous, thin-walled vessels coming up in loops towards the surface of the papillæ, and merely surrounded by radiating layers of epithelial-looking cells, as shown in Virchow's memoir on "Cancroids of the Os Uteri." From these vessels, which are very liable to injury, profuse floodings readily occur, debilitating and destroying the patient, who would not be so rapidly worn out by the disease if we could always manage to arrest them. Such a flooding, let me again repeat, is often the first symptom that attracts the patient's notice. It is apt frequently to recur in some cases, rapidly ruining and running down the patient's health and strength, and not infrequently proving the more immediate cause of her death. This bleeding, therefore, you will often be called upon professionally and practically to abate and arrest; and as one means of attaining your object you may occasionally require to have recourse to plugging of the vagina. But a mere plug of lint or sponge will not always suffice; you will sometimes have to medicate them with some agent which has the property of coagulating the blood. Some have recommended the use of a concentrated tincture of iodine as possessed of this property in a high degree. Others have spoken in favour of a strong solution of nitrate of silver. In either case it has usually been proposed to apply the medicaments through a speculum introduced into the vagina, and pushed up to the cervix. But when I stated to you in reference to the diagnosis of uterine cancer, that the speculum was a useless instrument, I should have added also that it was a dangerous one, for coming in contact with the vascular mass it almost necessarily excites more or less hemorrhage, or aggravates it when it has already been established; and we gain a very important point, if, in the application of our styptics, we can dispense with its employment. We have two remedies, the application of which is easy, and in almost every case is perfectly sufficient. One of these is tannin, which, when applied in the form of a fine powder through a small tube, or mixed up in the form of a medicated pessary, serves as a valuable means of coagulating the effused blood, and thus preventing the further flow. Matico and other vegetable astringent washes are useful merely in proportion to the quantity of tannin which they contain. But we possess a still simpler and surer styptic in the perchloride of iron, which I generally use as made at my suggestion by Messrs. Duncan and Flockhart, druggists, dissolved in glycerine. A saturated solution of it in glycerine is more adhesive to the surfaces with which it is placed in contact, than the solution of it in water. Perchloride of iron was proposed, as you know, by some physicians and surgeons on the Continent not very long ago, as a pre-

paration which—when injected into the sac of an aneurism, or the cavity of a varicose vein—would produce coagulation of the blood in them, and so lead to the permanent cure of these morbid states. For stopping the hemorrhage from leech-bites, it is the best and readiest agent we possess; and for arresting the bleeding from small orifices over an extended surface, such as exists in piles, I know no better remedy. A gentleman in our profession, for whom I have a very high regard, told me lately, of the great success which had attended its use in his own wife, who had long suffered from internal hemorrhoids, which frequently came down and bled to a great degree. Six months ago, she had a very bad attack, at a time when her husband happened to be from home. There had been much hemorrhage, and she was reduced to great weakness and faintness. Though the wife of a doctor, she was one of those ladies who have a great and salutary aversion to seeing doctors professionally; and so when she sent one of the members of her family to ask me for something to relieve her, I sent simply some perchloride of iron in glycerine, with instructions to apply it on a piece of lint. The bleeding was checked by this means at once, and her symptoms relieved; and, what is better still, the hemorrhage has never since returned. In connexion, I say, with hemorrhages from the uterus, it is likewise a most valuable agent, and may be applied in various ways. It deliquesces very readily, so that it cannot be kept and applied in the form of powder; but it may be made up for use into a medicated pessary. I apply it most frequently, however, on some lint or on a piece of sponge, to which a string is attached for its easy removal afterwards. Introduce a piece of sponge or lint partially dipped, or rather wetted in its centre, in glycerine, saturated with perchloride of iron, into the vagina; push it up to the os uteri, and leave it there for twenty-four hours; and usually you will find this result, that the bleeding is completely arrested, and there is no recurrence of it for a time. I sometimes see a patient at present in whom the hemorrhage from an ulcerating cancroid of the cervix had been allowed to go on for three months, under the idea that it was only an ordinary menstrual discharge of unusually long duration. Early in my attendance upon her there occurred a sudden and profuse drain, which rendered her almost pulseless. A sponge was applied, steeped in the solution in the manner I have told you, which at once put an end to the bleeding. There has been no recurrence of hemorrhage from that time to the present—a period of three months; but the disease is progressing in its fatal course, and lately has perforated the bladder, so as to allow all the urine to escape per vaginam.

3. *Measures calculated to counteract the Offensiveness, &c., of the attendant Leucorrheal Discharges.*—Another symptom which you will sometimes find it necesary to do something to relieve, is the fœtid and acrimonious discharge. The odour it exhales is occasionally sickening to the last degree; the very breathing of it fevers the

patient; and, therefore, the discharge must be checked or its effects counteracted as far as possible. This may be effected in some instances by the frequent injection of a weak solution of the chloride of zinc, in the proportion of a grain to the ounce of water; or one or two grains may be applied occasionally in the form of a medicated pessary. Or you may endeavour to fulfil the indication, as we have attempted it in the two cases in the hospital, by using pessaries containing from three to ten grains of M'Dougall's disinfecting powder. This deodorising powder was discovered, not by Mr. M'Dougall, but by Dr. Andrew Smith, the late director of the Army Medical Departments. It contains, I believe, as its active ingredients, carbolic sulphite of magnesia and lime, with the addition of five per cent. of carbolate of lime, and has the property of precipitating all fœtid and decomposing animal matters in foul waters, &c. When applied here in the form of a pessary or lotion it is of great use in relieving the odour, and serves at the same time as a cleansing and non-acrid application to the ulcerating surface.

Sometimes the vaginal discharge in cases of carcinoma uteri is, for a long period, watery and serous, without offensiveness or acridity, but weakening and detrimental from its great abundance and copiousness. This occurs particularly in instances in which the disease has a warty or cauliflower character. Such patients occasionally require to use many napkins each day in order to absorb the excessive serous discharge as it escapes from the vagina. In these cases the abatement and arrest of this profuse and debilitating drain becomes occasionally an important indication of treatment; but it is an indication which it is by no means easy to fulfil. Sometimes the assiduous and repeated use of astringent vegetable or mineral injections has the desired effect. More frequently their effect is only either very partial or very temporary. In order that they may be successful you generally require to change every few days from one astringent to another—as from a solution of tannin, or from a strong injection of oak bark or green tea, to a solution of sulphate of zinc or sulphate of alum, one of the least irritating and astringent of all—being a solution of the so-called aluminated iron, or sulphate of alum and iron in the proportion of three or four grains of the salt to the ounce of water. Sometimes these astringents answer more effectually if the patient apply them in the form of a small plug of sponge dipped in the fluids or solutions.

In all cases of carcinoma uteri, accompanied with discharge, due cleanliness and frequent ablution of the external parts and lower portion at least of the vagina, is a matter of moment, with the view of obviating the disagreeable and irritating effects of the acrid fluid which is passing over them, and adds greatly to the comfort of the patients. Sometimes the mucous membrane of these parts and the surrounding skin can be protected much from the irritation of profuse and irritating discharges, by the free application of liniments or ointments after each use of the bidet, or after each washing. Equal parts

of glycerine and simple ointment, or of glycerine and olive oil, or of lime-water and olive oil, often answer this purpose well.

Before I conclude these observations on the palliative treatment of carcinoma uteri, I must add one observation, lest my remarks may have misled you, so as to make you too officious in your management of your cases. Do not unnecessarily oppress your patients with the *ninia cura medicinæ*. In instances where the pain of the disease is not very great, nor the bleeding or discharges at all great, you will perhaps only aggravate the one and the other by unnecessary and meddlesome local treatment. You will frequently find cases of uterine cancer, particularly those of a slow type, go on better without any local treatment at all than with it. Such patients are often happier and more comfortable when cleanliness merely is duly attended to, and nothing special in the way of treatment is attempted or done. Reserve the palliative and local measures I have spoken of for these cases—and they form a large class—where such measures are really called for by the severity of the attendant symptoms.—*Med. Times and Gazette, Jan.* 22, 1859, *p.* 77.

136.—MEDICO-CHIRURGICAL USES OF VULCANISED INDIA-RUBBER.

The Medico-Chirurgical applications of caoutchouc air-bags are being again brought under the notice of the profession in this country; but the merit of originality belongs to M. Gariel, whose proposals appear to be ingenious and practically useful. We believe that our readers will find the following extracts from M. Gariel's Mémoire, translated and sent to us by Mr. Jardine Murray, of Brighton, to be interesting and instructive. The woodcuts are selected from among M. Gariel's illustrations.

Fig. 1.

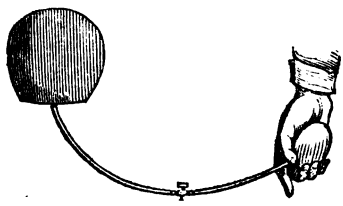


Fig. 1.—Caoutchouc air-bag, which may be used either as a pessary in displacement of the uterus, as a plug in uterine hemorrhage, or as a dilator of the vagina.

FIG. 2.

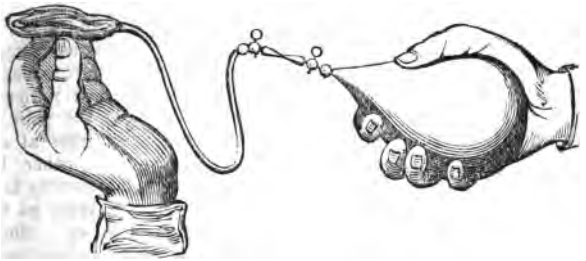


FIG. 2.—A similar air-bag of large size is here represented in the collapsed condition in which it ought to be introduced. The caoutchouc bag is distended to the requisite extent by compressing the insufflator, which is represented as held in the right hand. A ball-valve syringe may possibly be found preferable to the bag insufflator here represented.

FIG. 3.

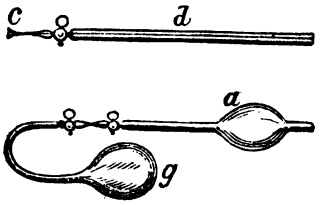


FIG. 3.—This figure represents M. Gariel's application for dilating strictures of the urethra, œsophagus, cervix uteri, &c. In its collapsed state the bulb is hardly to be detected. To facilitate introduction, the tube is fitted with a wire stylet *cd*, which is withdrawn when the end of the apparatus has been carried past the stricture. An insufflator, *g*, is then attached in the usual way, and the bulb, *a*, may be distended to the necessary degree. M. Gariel's ingenious chapter on this subject will amply repay perusal.

"APPLICATIONS FOR DILATATION.

P. 35. B. AIR SOUNDS FOR THE DILATATION OF THE VAGINA AND CERVIX UTERI.

"186. The sounds with bulbs applicable to the dilatation of the vagina and cervix uteri, must (like the bulbous sounds already described,—œsophageal, urethral, &c., p. 33) be introduced empty of air.

"187. The continuous and progressive dilatation which may be obtained by insufflation, is so powerful, that all congenital or acquired strictures of the vagina must give way before it, unless these latter be complicated with extremely hard cicatricial products (bridles).

"188. Their application is easy, however great the degree of stricture, since a sound 3 millimètres in diameter, may readily be made

to produce a dilatation of 2 or 3 centimètres. It may be necessary, however, to use sounds of various sizes; but it is only after having employed the smallest sounds that the larger sizes can be used.

"189. Might not this property of the bulbous air-sound be turned to advantageous use in inducing premature labour in cases of deformity of the pelvis? (Ne pourrait-on également tirer parti de cette disposition des sondes à renflement pour provoquer prématurément l'accouchement dans les cas de vices de conformation du bassin?)"

"HÆMOSTATIC APPLICATIONS.

P. 41. A. AIR-PLUGS.

"219. These plugs consist of a caoutchouc tube, terminated by a bulb which is scarcely noticeable when empty, but is susceptible of considerable enlargement when distended by insufflation. (See fig.)

FIG. 4.

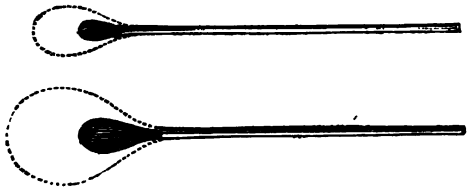


FIG. 4.—Air-bags, of various sizes, for plugging or dilating the vagina, cervix uteri, nasal fossæ, &c. The dotted lines indicate the periphery of the bags when moderately distended by air.

"220. They are applicable to all cases and to all cavities in which it is usual to resort to plugging.

"221. They are unalterable, and may remain in position during several days without undergoing the slightest decomposition.

"222. They apply themselves exactly over the parts which are the seat of hemorrhage.

"223. Their volume may be diminished at once, or by degrees, without producing any alteration in the shape of the apparatus, or any folds in its walls; the blood cannot, therefore, escape through one of those longitudinal folds which always exist when any amount of air is withdrawn from a non-elastic bladder.

"224. Should the hemorrhage reappear from their volume being too soon or too rapidly diminished, they may be reinflated with the greatest ease.

"225. These plugs may be made of vulcanised caoutchouc, or of caoutchouc imperfectly vulcanised, which latter I prefer in this special instance. When made of vulcanised caoutchouc, their walls are too resisting to allow of their being dilated otherwise than by an insufflator, and I would rather avoid the necessity of using an instrument which may have been forgotten and which at all events renders the

apparatus less portable. Besides, in cases of hemorrhage there is often no time to lose, and I think pulmonary insufflation may be more quickly accomplished than artificial insufflation can be.

"226. These plugs are so small that they may easily be carried in a Surgical pocket-case.

"227. The air-plugs suitable for the vagina, are of larger size than those for the rectum or nasal fossæ.

"228. The uterine plugs are always used successfully, except in flooding after delivery. Bleeding may always be immediately checked when it is dependent on polypus, cancer, &c.; or when it occurs during the early months of pregnancy. There is only one exception to this rule—when the os uteri is exceedingly dilatable, as after parturition at the full time.

"229. In such a case, if, after the application of a plug to the vagina or even to the uterine cavity, the flow of blood have been arrested, it were unsafe to infer that the hemorrhage is necessarily checked; for internal hemorrhage might be going on, and if unattended to, might cause the most serious accidents.

"230. But it is not certain that this would occur. It is questionable whether, the passages being hermetically occluded, the blood would flow in sufficient quantities to fill up the dilatable cavity of the uterus. Air is not indefinitely compressible, and there is every reason to believe that the accurate occlusion of the vagina (which may be so easily obtained) would suspend the hemorrhage after the loss of a few ounces of blood, and without it being necessary to apply direct compression at the point from which the hemorrhage originates.

"231. A very simple experiment proves how easy it is to produce hermetical occlusion of the vagina:—I take a tumbler a quarter or half filled with water; in the upper and empty portion of this I place an air-plug, which I insufflate until it presses against the wall the tumbler. If I then invert the tumbler the water contained in it will not flow out, but remains completely shut up, although no means is employed to retain the air plug in position. This precisely illustrates what takes place in plugging, and shows the action of the distended plug in opposing the escape of blood. It is further worthy of notice, that so closely does the caoutchouc adhere to the walls of the tumbler, that by pulling the tube attached to the air-bag, the tumbler is easily raised; and the result is the same, whether the tumbler be more or less filled, and whether it be cylindrical in shape, or conical like a wine-glass.

"232. By the use of these air-plugs we may entirely control all hemorrhages from the nasal fossæ, a circumstance explained by the solidity of their walls: but it is necessary to be careful that one extremity of the plug reach as far back as the pharynx; for, without this precaution, blood might continue to flow into the œsophagus.

"233. We must be prepared for a symptom which may occur when the plug is too much distended by insufflation. The patient complains

of a painful sensation at the epigastrium, he grows pale, and the forehead is covered with perspiration. These phenomena continue as long as the plug preserves its exaggerated distension, but disappears as soon as a little air is allowed to escape, and the volume of the plug is reduced to more convenient proportions. To what cause may these symptoms be attributed? Partly, no doubt, to the fact that the air-bladder, by its excessive distension, occludes simultaneously both the posterior openings of the nasal fossæ; but the symptoms of dyspnœa and of threatening suffocation are probably not entirely dependent on mechanical obstruction to respiration; there is reason to believe that they are in great measure due to compression of the par vagum.

"234. Whence the important precept never to carry the distention of the air-bladder to excess, and never to leave the patient immediately after the application of the plug."

Those who are interested in the matter will find the various applications (compression, dilatation, confinement, plugging, &c.) of the vulcanised caoutchouc bags further referred to in the passages indicated by the following references:—

Gazette des Hôpitaux, 1849, No. 141.
Gazette Médicale, 1849, No. 45.
Lancet, Dec. 1, 1849, p. 579.
Brit. and For. Review, Jan. 1850, p. 269.
—*Med. Times and Gazette, July* 16, 1859, *p.* 64.

137.—*Hydrocephalus.*—[At various times tapping for chronic hydrocephalus has been tried, but very rarely with success; we have done it in two or three instances ourselves, but always without success.]

The statistics of the operation have been carefully considered by Dr. West, and the subject has been investigated by Dr. Battersby, of Dublin, Dr. Winn, and others, and all agree in the opinion that tapping is useless. The per-centage of actual cures, as compared with the deaths, is exceedingly small.—*Lancet, Dec.* 25, 1858, *p.* 654.

138.—*Constipation in Children.*—Wherever, for the last few years, I have met with obstinate constipation in infants, I generally succeeded in giving speedy and full relief, by ordering some sweet sugar-water to be taken every day, besides the breast. I am satisfied that the chief cause of constipation in nurslings is the insufficiency of sugar in the breast-milk, the proportions of which are naturally not the same with every mother. Wherever caseine exceeds the proportions of the other parts of the milk, it becomes indigestible, by a relative want of lactic acid in the contents of the stomach and intestines.—Dr. Jacobi, *in New York Journal of Medicine, Sept.* 1858. —*Dub. Hospital Gazette, March* 1, 1859, *p.* 79.

MISCELLANEOUS SUBJECTS.

139.—A TEMPERATE EXAMINATION OF HOMŒOPATHY.*

No. II.—The Principles of Homœopathy, with a few Hints on the Nature and Cure of Disease.

By W. Braithwaite, Esq., Leeds.

In our last volume we endeavoured to explain "The Doses and Provings of Homœopathy." We will endeavour in this, our 40th volume, to point out the *Principles* of Homœopathy, and show that these principles are inconsistent with the true principles and practice of medicine, and dangerous to be trusted to when applied to the healing of diseases. We wish to examine this subject in a fair and temperate way, so as, if possible, to convince even the homœopaths by fair and simple arguments, how inconsistent their principles are with the modern science and art of medicine. We wish also to say that we only state our own views, which may probably differ from the views of numerous other medical practitioners. If any one, therefore, see fit to answer this pamphlet, let it be done by fair argument, and in a proper spirit, by keeping to the point, and not by flying off to other questions.

In our last pamphlet we asserted that the homœopaths used what are called dilutions in mixing their medicines, and that each dilution was represented by adding two ciphers to the original unit. Thus, the first dilution of a drop or grain was the 100th; the second dilution the 10,000th; the third, the 1,000,000th; the 20th, the 100,000,000,000,000,000.000th; and the 30th, or decillionth, the 1.000,000,000,000,

this would be 12,000 in an hour, 288,000 in a day, and 105,120,000 in a year,—it would take 9,512 years, at the above rate of 200 a minute, to count a billion! And yet this is only the 6th dilution used by homœopaths, viz., the 1,000,000,000,000th of a drop or grain. Some, however, will dilute their drugs to the decillionth part of a drop. This no one will or can deny. It is a fact which any one who reads their writings may prove for himself. No man, we say, can count a billion; much more difficult would it be to count, or even to comprehend a *decillion*. We give the following figures, which will show the various dilutions of homœopathic medicines, so that they who practice this art may know at once how much of the original drop of medicine is contained in the mixture which they are giving or prescribing:—

Decillion. nonillion. octillion. septillion. sextillion. quintillion. quadrill. trillion.

1,000000,000000,000000,000000,000000,000000,000000,

billion. million.

000000,000000,000000.

Now this puts the practice in so absurd a light, that the homœopaths try to get out of the dilemma in all kinds of ways. Some say they do not depend on doses: others say that these infinitesimal doses are rendered powerful by *shakings* and *triturations*. Hahnemann believed that infinitesimal division of drugs produced a real *spiritualization*. "Long triturition," he says, "if carried very far will make the drug *quite ungovernable*." In another place he says, "by the succussion and trituration employed a change is effected in the mixture, which is so *incredibly great*, and so *inconceivably curative*, that this development of the spiritual power of medicines to such a height by means of the multiplied and continued trituration and succussion of a small portion of medicinal substance deserves incontestibly to be reckoned among the greatest discoveries of this age."—(*Lesser Writings*, p. 818.) But this, if possible, is outdone by Dr. Mure, who is described as the "Apostle of Homœopathy." The disciples of his school were obliged to subscribe to the following article:—"I believe that all substances in nature, even those regarded as the most inert, possess the power of acting on the vital dynamism, because all contain a *spiritual principle* which they derive from God."—(*Brit. Journ. of Homœopathy*, vol. vii., p. 535. See *Dr. Simpson's Work*, p. 23.) We think it must be this *vital dynamism* which is alluded to by Dr. Craig in his late pamphlet; but as he has only slightly alluded to this extraordinary power, we hope that he cannot hold such a foolish theory. He writes, however, of the "*dynamic* or *vital agents*" with reference to homœopathic medicines, in such a way that one cannot wonder that those who call themselves *Homœopathists*, "incur (as he confesses) the enmity and ridicule which the very name provokes."

Another mode of accounting for the power of drugs, or rather another mode of communicating power to them, is by *Infection*. Hahnemann, in his 'Lesser Writings,' says, "Thus much is deducible from

Korsakoff's experiments, that, since a single dry globule imbibed with a high medicinal dynamisation, communicated to 13,500 unmedicated globules, with which it is shaken for five minutes, *medicinal power fully equal to what it possesses itself*, without suffering any diminution of power itself, it seems that this marvellous communication takes place by means of proximity and contact, and is a sort of *infection*, bearing a strong resemblance to the infection of healthy persons by a contagion brought near or in contact with them."—(*Lesser Writings*, p. 859.) We need make no comment on this extraordinary theory. We leave every man of common sense to think as he likes of it.

The way in which other homœopaths defend the infinitesimal dose system is sometimes curious. One of their best writers is Dr. Dudgeon. In one of his letters, in defending the infinitesimal doses, he says, "Calculate the quantity of matter you leave on the ground in a five-mile walk, which shall reveal your track to your sagacious dog; the weight of the musk conveyed in an odorous billet that shall make a sensitive lady faint; the quantity of ipecacuanha that escapes from an uncorked bottle, that shall give some idiosyncratic individual a fit of asthma; the weight of the odour from a rose, that was wont to make an eminent cardinal swoon; the cubic contents of a fit of anger that shall give your irascible neighbour the jaundice," &c.—(*Med. Times*, 1850, p. 605.) We cannot perceive that this is any argument to prove the value or efficacy of an infinitesimal dose of laudanum. You *can* divide a drop of laudanum, so as to get the 100,000,000,000,000,000,000th, or the tenth dilution, but how can you *weigh* or *divide* a *smell* or *odour*, or *measure* a *fit of anger*? The thing is ridiculous; and very ridiculous to defend infinitesimal doses in such a way. And even if you could *weigh a smell*, we suspect the cause and effect would correspond, in the same way that the light of a star, which we see at an immense distance, corresponds exactly to its size, distance, and quantity of light. There might be a little more argument in Dr. Dudgeon's illustration, if he had previously proved, as facts, that the dog had traced his master from New York, when his master was at that moment on the Rocky mountains; or, that the ipecacuanha escaped from a bottle at Bombay, and gave the asthma to a member of his family in his own comfortable house in England; or, that the odour of the rose was emitted from Pekin, and struck down with its odour the cardinal at Rome. But even these effects would be insignificant when compared with the effects of the 100,000,000,000,000,000,000th of a drop of laudanum in disease.

Now that the modern homœopath has got himself into the ridiculous dilemma about his small doses, he begins to *back out* of this difficulty, and to say that the *principles* of his creed have nothing to do with small doses, that he can give any doses he likes without violating his principles. It is true that the *principles* of a science are very different from the *practice*, and that the principles can be worked in different ways, either well or ill: for example, a sailor may work the principles

of astronomy very badly, and wreck his ship; another may work them well, and arrive at his port safely. So one homœopath may work his principles by small doses, and another by large doses, and although each may work his principles well or ill, neither may really violate his principles. But how is it, when the homœopaths repudiate these ridiculously small doses—such as the 1.000,000,000,000th (billionth) of a grain or drop of cocculus in colica menstrualis; or the 1,000,000th (one millionth) of a grain of ipecacuanha; or the 10,000,000th (ten millionth) of a grain of belladonna; or the 1,000,000th of a grain of bryony; or the 100,000,000th of a drop of aconite; or the 100,000,000 of a grain of phosphorus—that *these are the very doses used by Dr. Fleischmann in the Vienna Hospital*, on whose reports the homœopaths lay so much emphasis, and spread these same reports far and wide as specimens of success? Here we can convict the homœopath of throwing dust into our eyes. He says, "We do not depend on these ridiculous doses," and in the next breath he says, "Look at the success of homœopathy in the Vienna Hospital—we cure more cases than the allopath by our mode of treatment!" The contradiction in these two assertions would be very unlikely to be found out, except by one who examined the medicines and doses used by Dr. Fleischmann. We have done so, and found out that the so-called cures were said to have been performed by the doses we have just mentioned. We assert, therefore, that whatever the homœopaths may say to the contrary, *they do give and do depend on these ridiculous doses*, however they may deny this to the public. We must look to their published writings for an explanation of their practice, and not to what they say privately. Even our friend, Dr. Sharp, of Rugby, in his pamphlets, frequently alludes to these infinitesimal doses, and says that he himself most frequently uses the *one-millionth* of a drop, but has seen good effects from the 1,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000th of a grain or drop. When we occasionally heard it asserted by the homœopaths, that these doses had nothing to do with the principles of homœopathy, we at once referred to their practice in the Vienna Hospital, and found the cases almost invariably treated by infinitesimal doses. We were, therefore, greatly surprised that the homœopaths repudiated, in a great measure, these small doses, and in the same breath extolled their good effects. (The only excuse we could find for this contradiction was, that they had not studied their own *statistics*, and merely took for granted what other people said.) The reader will find a full report by Dr. Balfour of numerous cases treated in the Vienna Homœopathic Hospital by Dr. Fleischmann, in the British and Foreign Medical Review for October 1845, p. 567, in which report the dilutions of nearly all the medicines used are accurately noted. Amongst numerous other cases, catarrh and bronchitis were treated with the 100,000,000th of a grain of sulphur, and with 1,000,000th of a grain of aconite; spasm with the 1,000,

000,000,000th (billionth) of a grain of ignatia, once daily. We could go on multiplying these instances, but we have said enough to show that, when a homœopath denies or repudiates these ridiculous doses of medicines, he is not supported in his assertions by the best writers of his own school; they are nearly all against him. The Principles, therefore, of homœopathy, and the Practice, are necessarily two distinct things; but the practice of homœopathy, nevertheless, is based on the most ridiculous and absurd doses of medicine ever invented: and now that the thing is exposed, the homœopath is beginning to be ashamed of it himself. To such an extent is the infinitesimal dose system carried by some, that Dr. Balfour states, that in Vienna "one practitioner often contents himself with allowing his patient to *smell* the remedy, waiting patiently for some weeks or so, for the completion of the cure, not even permitting a second smell." Hahnemann, we are told, did the same: and one lady, "having been subjected to this process, *passed the fee before the doctor's nose*, and then—replaced it in her pocket." (*Dr. Lee's Homœopathy*, pp. 7, 8.)

Our chief object in this pamphlet will be to examine "The Principles of Homœopathy:" but, before doing so, we will first explain a little more at large than we had room for in our last pamphlet, our objections to the way in which the homœopathists endeavour to spread their doctrines, and endeavour to gain an advantage over regular physicians and surgeons. We blame no one for differing from us in opinion, but we do blame any man for endeavouring to spread his opinions in such ways as the homœopaths adopt.

It has been one of our greatest pleasures for the last twenty years to take almost daily notice of the progress of medicine in the various medical works which have been published. We have generally omitted noticing the *errors* of our fellow practitioners, for obvious reasons; at present, however, we must deviate from our general rule, and notice some of the errors both of doctrine and practice which have crept into our ranks. We shall endeavour to do this in a temperate way, so that none may find fault with us on this head. If a little humour or ridicule occasionally escape, we hope that people will take it in good part. We shall mean nothing ill by it; our object will be chiefly to defend our noble, humane, and scientific profession from assaults which have been lately made against it, more in a rude than in a scientific and gentlemanly way.

Few sciences or arts have more improved than has the Science of Medicine within the present century. But its career has been silent, and unobserved, except by the medical practitioner. We need not refer to the various improvements in the practice of Surgery, such as operations on the eye; restoring lost parts, such as the mouth, the palate; amputation of limbs; taking out diseased joints and joining the limbs together again; curing club-feet and all kinds of deformities; treating aneurism, by compressing the artery and without tying it; curing hernia radically, so as to save the use of a truss, and prevent

the risk of strangulation; operating on the strangulated hernia without opening the sac; and innumerable other improvements, which every well-informed surgeon is aware of. We will more particularly refer to the improvements in finding out and treating internal diseases, and then ask if the modern science of Medicine deserves the "nick-name" sometimes given to it of "the old system." In our opinion there are no sciences or arts more *new* or modern. The modern practitioners of medicine by no means go by the old ideas, which are sometimes unjustly quoted by homœopathic writers in disparagement of living practitioners. Among modern improvements we may enumerate our increased knowledge in all diseases of the nervous system, viz., delirium of all kinds, convulsions, and paralysis; diseases of the chest, which, by the modern improvements in auscultation we can accurately distinguish the one from the other, foretelling from the nature of the sounds the progress of the disease, and its results to the patient; diseases of the kidneys, which have become much more clearly understood by means of chemistry and the microscope; diseases of the liver, which, by the microscope and testing the urine, we can much more accurately define; diseases of the blood also have become more intelligible and amenable to treatment, besides many others which we have not space here to mention. Whatever homœopath, therefore, alleges against the modern practice of medicine, that it is the "old system," is evidently no reader of modern books, but of old ones. He is being left behind by his reading competitors, and trusts to the knowledge which he has picked up in days long gone by, when a young student under what he would call "the old school."

If he had even turned to one of our last Retrospects, vol. 38 and 39, published only twelve and six months ago, he would have found numerous articles by different writers, in nearly every one of which there is some new and improved idea and method of treating diseases. He would have found something new on Cancer, Rheumatism, Scarlatina, Myalgia, Neuralgia, Tetanus, Nævus, Asthma, Diphtheria, Pneumonia, Diabetes, Uric Acid or Gravel, Chloroform in Labour, the Womb, Ovarian Dropsy, Diseases of Women, Carbonic Acid as an Anæsthetic, with numerous other very interesting observations. If, moreover, he will turn to the present and several preceding volumes, he will find recorded *every year* nearly 300 suggestions and some decided improvements in the theory and practice of medicine, by various authors,—some very valuable and remarkable improvements.

We mention this, in order that the public may give due credit to the progress of medicine, and not be led away by homœopathic writings which attempt to mislead people to suppose that scientific medicine is at a *stand-still*, whilst the homœopathic system is said by them to be advancing. We shall see as we go along, whether it be honourable and decorous in homœopathic writers perpetually attempting to impress upon people that theirs is the *new system*, whilst ours is the *old system*. We have been particularly struck with this unjust nick-

name given to regular physicians of high character and long success in their particular localities; and we would recommend the homœopath, if he wishes to gain any respect, to depend on his own knowledge, and not to make reflections of an injurious and unjust character on gentlemen not to be surpassed in practical knowledge and success.

It is another great mistake to call a regular, or rational, or scientific practitioner of medicine, an *allopath*, or *antipath*. It is another *nick-name*, which no right-minded man ought to give to another. The homœopath has given himself his own name, and therefore he must take it; but there is no such person as an *allopath* or antipath in regular practice. Allopathy, which we shall use in preference to antipathy, includes the method of opposing nature in her efforts, but this is not true of any one. Another mistake made by homœopaths, and a more discreditable one cannot be made, is to depreciate other medical men in the estimation of the public, by attempting to throw discredit on the practice of medicine adopted by other people, always excepting themselves—after picking holes in other people's coats and making them as ragged as possible—they adroitly display themselves in their own new dress. We have been particularly struck with the way in which they have made extracts from the writings of regular physicians, nearly always selecting their candid confessions of failure in certain cases, and never exhibiting the other and brighter side of the question, viz., where they have succeeded; or perhaps they have selected passages from books so as to make the science of medicine as objectionable as possible. but the inaccuracy of which the unprofessional reader cannot perceive. What would be thought of a clergyman, educated at Cambridge or Oxford, and having received his degree and honours there, and been ordained by his Bishop,—who seceded from the church, and not only stated that there was no way of salvation within her pale, but who took every opportunity (although still possessing. and being proud of, his degree of A.M., or D.D.) of finding all sorts of fault with the college education, the principles taught, and the religion entertained; especially if his abuse of others was suspected to add to his own pecuniary advantage,—would he not be *cut* by his former associates? Or what would be thought of a provision dealer, if he issued placards and advertisements that he had found out an improved method of preparing flour, that all the flour in the town, except his own, was adulterated with an inferior article, and moreover contained poison in large doses,—would he not also be *cut* by his fellow tradesmen? So it is in our profession. We find no fault with people entertaining different opinions; but when we see all kinds of ways of making invidious distinctions between themselves and others, mixing their medicines in particular ways so as to be something *new*, publishing and asserting that regular physicians exhibit medicine in large and poisonous doses, with various other ways of gaining notice, we think it derogatory to a respectable and learned profession.

But it is particularly unfair, and untrue, to allege that regular physicians employ strong poisons as medicines, and give such large doses that the constitutions of their patients become injured,—whereas they, the homœopaths, give such small doses, that all this danger is avoided. We must assert that all this is a system of proceeding highly discreditable.

We could *disgust* every one of our readers by telling them of some of the remedies which some homœopaths use. But we consider that these remedies are used only by some, and can be no proof of the general practice of the body. We should not think, therefore, of using these prescriptions in an argument against homœopathy neither is it fair in the hom œopaths to pick out some of our most objectionable old prescriptions from old books, and bring them forwards as specimens of what they call the *old system*, without at the same time candidly telling the public that this kind of practice has long since passed away from the ranks of all well educated surgeons and physicians. As an illustration of the way in which the practice of regular physicians is shown by the homœopaths, you have only to turn to the pamphlet of Dr. Horner, of Hull, who states at p. 5,—"Vegetable drugs, as aloes and colocynth, which had been administered even *some years* before, remained deposited in the system, producing a miserable and wholly shattered state both of mental and bodily health." But this is outdone by Dr. McLeod, of Benrhydding, Ilkley, who states, that "Such drugs as aloes were extracted tangibly and washed out of the compresses that had encircled the body: it also made the patient's room offensive with the distinct vapour of aloes." (*Dr. Horner's Pamphlet*, p. 53.) This is really too bad! We naturally read a little further, expecting to find the next wonder to be that this vapour of aloes had been condensed and again made into the identical family pills which the unfortunate patient had been swallowing; and that they were actually to be seen exposed as a curiosity in one of the windows of Benrhydding!

The medicines employed by modern physicians and surgeons are not to be called poisons; for when poisonous medicines, such as arsenic, opium, belladonna, aconite, mercury, &c., are used, they are prescribed in such small doses that they no longer act as poisons. It does sometimes happen, that medicines act more energetically than was anticipated, but this is a rare exception; and it is wrong to take these rare exceptions and spread them before the public as the rule. The object of the homœopathists is, we are sorry to say, a very discreditable one: it is evidently to excite the fears of people that they are always taking poisons when attended by regular surgeons and physicians—a very wrong idea indeed, but one which we feel certain they are anxious to propagate. The public, however, may rest satisfied that the modern system of medicine in the regular ranks of the profession, is to do with as *little*, and not with as *much* medicine as possible; with as *mild*, and not with as *strong* medicines as possible. The reader has only to

refer to the writings of Dr. Sharp, of Rugby, if he wishes to be convinced of the truth of these remarks. Amongst other things, he will find in one of his Tracts, a *wood engraving* to illustrate the way in which hot irons are prepared to be applied to the patient in surgical cases! This engraving would remind one of the tortures of the Inquisition; but how unworthy to exhibit these things to the public in order to excite their fears and prejudices. Why cannot a respectable man, like Dr. Sharp, whom we have known for thirty years, make use of fair argument, without first attempting to damage his opponents in public estimation. We might think it excusable in Morrison, Dr. Coffin, and such like men, but for respectable and well-educated men to do this is highly unworthy.

Another objectionable practice of the homœopaths is to publish Statistical Tables, which, if not incorrect, are at any rate so placed before the public as to mislead. For our own part, we think that most statistical tables may be fallacious, except those of the Army and Navy, which must be the most correct of any statistics of this kind which are published. The error of these homœopathic tables is at once seen by reference, for example, to the Statistics of the Leeds Infirmary. One homœopathic writer, Dr. Craig, of Leeds, asserts that the per centage of deaths in all diseases in Homœopathic hospitals is 5.8 per cent., while in Allopathic hospitals it is 12.4 per cent. Moreover, this writer, in a feeble attempt to answer our first pamphlet (but which is no answer at all,) publishes this error at the end of his pamphlet, together with his account of the officers of the London Homœopathic Hospital, all of which had nothing to do with what he was writing about, but were placed there in the way of display. If this said writer had examined the Report of the Leeds Infirmary for the last year, he would have found the following figures: "Patients admitted since 1767, 247,911; cured, 165,639; died, 8161; relieved, 30,723." So that we have about 8161 deaths out of 247,911 patients. We make this account to give 3.2 per cent. of deaths; but making allowance for mistakes, we think that we may calculate about 4 per cent. of deaths, *and not* 12.4, *as Dr. Craig asserts!*

We believe all the hospitals of Great Britain will not average much above 5 per cent., including all accidents and dangerous surgical cases. One of the most dangerous operations on the human body is cutting for stone. The average per centage of deaths after this operation is only about 13; so that, if every patient admitted into all the hospitals of Great Britain and Ireland had been cut for stone, as many would have recovered as Dr. Craig makes out from common and ordinary diseases.

We are quite aware that it is difficult at all times to arrive at a correct conclusion respecting Hospital statistics, if we include out-patients. It is very possible in such an hospital as Fleischmann's Homœopathic hospital, at Vienna, for the cases to be selected, as

we know to be the case. In general hospitals, such as the vast hospitals of Vienna and Paris, only the *worst* cases, both medical and surgical, are selected for admission, often quite incurable from the commencement. It is obviously unfair, therefore, to calculate the per centage of deaths among the *in*-patients and exclude the *out*-patients; both *in* and *out* patients ought to be reckoned. But here is the difficulty; it is easy to calculate how many die, or are cured in the hospital, but it is not so certain when we refer to the *out*-patients. The calculation of the Leeds Infirmary is of both *in* and *out* patients as near as could be made. The statistics of some of the hospitals of Vienna, Paris, and London, and indeed of all *in*-patients of hospitals, show a much higher per centage of deaths, for the reasons which we have stated, but we repeat that this is not a fair calculation. It only respects the cases which are selected *as the worst* which apply for relief, and generally excludes the milder *out*-patients; we believe, however, that taking the whole together, and including all accidents, and surgical operations, the average will not be above 5 or 6 in British Hospitals. In our next pamphlet we will endeavour to calculate this as well as we can. Such an institution as the Leeds Public Dispensary, is, perhaps, as good an example as can be used to show the per centage of all kinds of cases, good and bad, medical and surgical. These cases are prescribed for in the institution, and the bad cases are visited at their own homes, so that the register of deaths must be pretty accurate. We find in the report for 1858 the following figures:—"Patients admitted since 1824, 111,100; cured 90,156; greatly relieved 5750; died 4476." This gives us 4·02 per cent. of deaths, a very different thing from what the homœopathists would wish the public to believe. Dr. Craig further carelessly states, that in Homœopathic hospitals only 5·7 per cent. die of inflammation of the lungs, while 24 out of every hundred die in Allopathic hospitals. We only request Dr. Craig to examine one of the last official Army returns for the Colonies. Of 12,271 cases of inflammation of the lungs, he will find that only 413 died; this is about 3 per cent., and in some cases only 2 per cent., i.e. less than *half the number* which Dr. Craig himself acknowledges die in Homœopathic hospitals! What, therefore, can the public think of Dr. Craig's statements? In our last volume is an interesting paper on lithotomy, abstracted from the lectures of Mr. S. Smith, of the Leeds Infirmary: out of every 8 cases operated upon for stone, only one has died; this gives us about 13 per cent. If this gentleman had operated for stone on all the 247,911 patients admitted into the Leeds Infirmary for the last 93 years, he would probably have had no more deaths than what Dr. Craig says take place from common diseases.

We requested Mr. Blakelock, the Secretary of the Leeds Infirmary, to calculate the per centage of deaths in that institution, and the following is his letter to the author:—

LEEDS GENERAL INFIRMARY,
November 5th, 1859.

"My Dear Sir,—According to your desire I have calculated the average per centage of Deaths occurring amongst the patients of the Leeds Infirmary. The whole number of patients admitted during the 93 years which have now elapsed since the foundation of this institution has been 252,937, amongst whom there have been 8276 deaths, giving an average of 3·27 per cent. During the first 12 years, the average mortality was 5·1 per cent. During the last 12 years, it has been 3·33 per cent. The very slight increase of the last figures over the general average is accountable for by the great mortality which occurred after operations during the summers of 1852, 53, and 54. It must be borne in mind that these figures include a large number of deaths from serious burns and mill accidents, many of the patients dying within a few hours of admission. If these could be excluded, the mortality would be still further reduced. No register is kept of the number of patients admitted for each disease separately, so that the per centage of deaths in pneumonia cannot be ascertained. I, however, find that only four patients are entered in the death-book as having died from pure pneumonia during the last four years.

"I am, dear Sir, very truly yours,

"SAML. BLAKELOCK, Secretary.

"W. Braithwaite, Esq."

We think this statement of Mr. Blakelock's highly creditable to the officers of this noble Institution, and will be gratifying to its numerous subscribers. We hope also that it will silence the attempts of certain individuals in Leeds to cast reflections on the modern practice of medicine. We wish and hope that it may also gratify them; but of this we are more doubtful. We are afraid they would have been better pleased to have had it proved that the practice had been very unsuccessful, and that 12 out of every hundred had died instead of little more than three. We are aware, that in all the hospitals at Vienna, *there is very great fatality*, amounting probably to what Dr. Craig states. Why does he not candidly tell the truth to the public, and acknowledge that these tables do not refer to the hospitals of Great Britain, nor to the Army and Navy. Why does he leave the public to believe that our own hospitals are included in these statistics?

We will now give the reader the words of Hahnemann on the real Principles of his creed, and proceed to make some remarks on this question.

"A weaker dynamic affection is (says Hahnemann) permanently extinguished in the living organism by *a stronger one*, if the latter, whilst differing in kind is similar to the former in its manifestations." Again, "All the rapid and perfect cures that nature ever performed were always effected by the supervention upon the old disease of one of a *similar* character."—(*Organon*, p. 165.) And hence he says "for this mode of procedure (by Homœopathy) we have the example of

unfettered nature herself, when to an old disease there is added a new one similar to the first, whereby the one is rapidly and for ever annihilated and cured." (p. 175.) "The stronger disease annihilates the weaker." (p. 145.) In another place, he says "In order that the artificial diseases producible by medicines may effect a cure, it is before all things requisite that they should be capable of producing in the human body an *artificial disease as similar as possible* to the disease to be cured, in order, by means of this similarity, *conjoined with the somewhat greater strength*, to substitute themselves for the natural morbid affection, and thereby deprive the latter of all influence upon the vital force." (p. 133). In order to accomplish the end above described, certain medicines are to be chosen which will produce *symptoms as similar as possible to the disease to be treated.* The homœopathic mode of treatment therefore is that "in which there is employed for the totality of the symptoms of the natural disease, a medicine capable of producing the *most similar symptoms possible* in the healthy individual." (p. 175.) But in order that this medicine should be efficacious and more powerful than the disease, it must at first, for a longer or shorter period, produce an *aggravation* or *exaltation of the symptoms of the disease*, and not their relief or abatement. The disease indeed ought to be made worse at first. The drug must first produce "a medicinal disease somewhat *stronger* or *greater* than the malady to be cured." (p. 237.) In other parts of his work, Hahnemann says "The similar artificial diseases excited by medicines are stronger than the natural disease." The physician "produces a disease very similar but *stronger*" than the natural disease. "The curative power of medicines therefore depends on their symptoms, *similar to the disease*, but superior to it in strength." (p. 126.) So that a disease can be removed "solely by one that is similar *in symptoms* and is somewhat *stronger*, according to the eternal, unchangeable laws of nature." (p. 151.) So that in a severe, dangerous, and rapid disease in which life depends on the next few hours, and any increase of which disease must *necessarily* be fatal, the symptoms ought at first to be increased in severity. A homœopathically selected remedy, Hahnemann observes, "usually, immediately after ingestion, for the first hour or *for a few hours*, causes a kind of slight aggravation (where the dose, however, has been somewhat too large *for a considerable number of hours*) which has so much resemblance to the original disease that it seems to the patient to be an aggravation of his disease. But it is in reality nothing more than an *extremely similar medicinal disease*, somewhat *exceeding* in *strength* the original affection." (p. 237.) Hahnemann further says that "the sum of all the symptoms in each individual case of disease must be the *sole indication*, the sole guide to direct us in the choice of a curative remedy." (pp. 119, 120.) "By the removal of the whole of the perceptible signs and symptoms of the disease the sum total of the disease is at the same time removed." "It must be the *symptoms alone* by which the disease

demands and points to the remedy suited to relieve it, and, moreover, the totality of these its symptoms must be the principal or sole means whereby the disease can make known what remedy it requires, the only thing that determines the choice of the most appropriate curative agent, and thus, in a word, the *totality of the symptoms* must be the principal, the *sole thing* the physician has to take note of in every case of disease, and to remove by means of his art." (p. 113.)

Now, when we read the above principles of homœopathy, we are struck with two or three remarkable fallacies which might mislead any one who had not studied the nature of disease. The great error in these principles is to mistake symptoms for disease, the effects for the cause. A patient has a violent pain in the face, it is called tic-douloureux—the cause of this is a decayed tooth. The symptoms are the tic, the cause is the tooth. Another patient has a violent headache, or dizziness from a loaded stomach—the headache is merely the symptom, the cause is the loaded stomach. To treat the pain in the face by giving medicines which would resemble tic, would be called an empirical mode of treatment, *i.e.*, treating only symptoms—to extract the tooth would be eradicating the cause. To treat the headache in the same empirical way would be nonsense, but to unload the loaded stomach would be treating the cause radically. Another great error in the above dogmas or principles of homœopathy, consists in generating a more powerful set of symptoms similar to the disease, in order to overcome the original disease. This is a dangerous error, and may account for the startling fact, that the homœopaths seem to have considerably more deaths, according to their own acknowledgment, than regular surgeons and physicians, if we may judge from the statistics of the Leeds Infirmary.

In order, however, to discuss this question properly, it will be necessary for us to explain in as familiar a style as we can what are the *modern views of disease*, which are gradually becoming better known; and also what we mean by a *principle*. As we go along, the reader will better understand how the homœopath mistakes a principle for an art, and a disease for a symptom. The following ideas on the nature of disease are explained in a familiar style, and some of them may be deemed not satisfactory by the profession. We acknowledge that the subject is a difficult one, and that all have a great deal to learn on this question; and we think that the day is not distant when this very interesting subject will be worked out more clearly. It is very probable that our opinions may be much criticised by some of our professional friends. This we are prepared to meet with: but our object is not only to show the errors of homœopathy, but to endeavour to point out where, in our opinion, the true principle of medicine exists. We shall endeavour to show that in most, if not all diseases, there are, 1st, The disease itself; 2ndly, the effects and *necessary* symptoms or consequences of the disease; and 3rdly, another and quite different set of symptoms, *which are not always nor necessarily con-*

nected with the disease, and which are the *efforts* of *nature*, either too strong or too feeble, or just right, to rectify the disease. The error of homœopathy consists in simulating and even aggravating the second class of symptoms, or those which are *necessarily* connected, and sometimes said to be *identical*, with the disease. The object of Modern Scientific Medicine is to regulate the third class of symptoms.

What, then, is Disease? It is on the definition of this important question that most of the errors in practical and theoretical medicine have arisen. It is in ignorance of the nature of disease that the system of homœopathy has arisen. It is this ignorance of disease which induces the homœopath to treat *symptoms* of disease instead of the disease itself. In this consists his great mistake, as we shall endeavour to show; but in attempting to point out this mistake, we shall be compelled to make some preliminary remarks, in a familiar style, in such a way that the public may understand us. These remarks would be quite unnecessary to educated medical men, but we must remember that pamphlets of various kinds have been distributed by the homœopaths to the public, which seem very plausible, but which, in our opinion, are very unsound both in argument and facts.

It is alleged by the homœopath that the scientific or regular physician has no principles to guide him, but that in homœopathy there is a certain and infallible *principle*. A *principle* means a *truth* which is unerring. A stone is thrown up into the air, and it invariably falls down, owing to the principle or truth of gravitation. We have always day and night, owing to the *principles* of astronomy. To be a real principle, it must never fail. If homœopathy be founded on a true principle, it ought never to fail—all its cases ought to recover if treated properly, and if they do not recover it is owing to their having been treated improperly. If you point your ship to New York by the guide of the magnet it will surely arrive at the spot: it will not sometimes arrive at New York, and at other times at Halifax—it will never fail you. If you arrive by mistake at Halifax instead of New York, either your magnet is wrong, or you have not followed its principle. If the homœopath says he has found out a true principle of medicine, but frequently fails in his cases, either the principle is wrong, or he has mismanaged it. If he answer that the principle is right, but that circumstances occurred which prevented him following it, we should say that the principle is not worth much if it be not trustworthy in a storm as well as a calm. If the sailor tells us that he arrived at Halifax by mistake instead of New York on account of the storms, we should say that his magnet must have been of very little use. He was obliged to manage his ship according to circumstances, and to trim his sails according to the storm; his *principle* of navigation was of comparatively little use—his *art* of sailing was of more use, and his *art* preserved his ship from destruction.

We consider that the whole practice of medicine depends on an accurate knowledge of what is *Scientific* in its principles, and on how far

Art can carry out, or work on, these principles. We can best illustrate our definition in a few words by pointing out that the *art* of navigation is founded on, or the working out of, the *principles* of *astronomy* and the *magnet*. The sailors of old had few or no principles to guide them; they navigated their ships from Greece to Italy, or from Tyre to Carthage, by the *art* of navigation chiefly. They understood the position of the stars, and the sun and moon, and these were their chief guides, but they depended also on the shores and mountains along which they passed. Astronomy was in its infancy, and the magnet was not known. Navigation, in fact, was an *art*. By and by, however, the magnet was discovered—its principles were found certain and infallible, it could not mislead. The sailor could now boldly plunge his ship across the Atlantic with unerring course; his *art* became founded on a *science*, or a *principle* which was infallible. His art might vary in the following of this principle, but he always kept his magnet before him. The man at the wheel was steady at his post, although the sailors were busy with the sails. The man at the wheel was guided by a *principle*, the sailors during the storm were guided by an *art*. The principle or science could not vary; the art might vary according to every direction of the wind. So it is in the *science* and *art* of medicine. The *science* of medicine is difficult to discover; it is only just now beginning to be seen. The *art* of medicine has long existed, but only as an *art* founded on experience.

One great error which has blinded the minds of medical men in observing the true principles or science of medicine is in confounding *symptoms* of disease with the *disease itself*. Thus, a man has a bit of dirt in his eye, perhaps a bit of sharp sand blown on his cornea by the wind; he cannot displace it himself—what occurs? The eye begins to inflame, and looks red and angry; inflammation comes on and the eye looks *diseased*. But is this disease? No; it is only the *symptom* produced by the bit of sand—the sand, in fact, is the real disease, and the inflammation is nothing more than an effort of nature to get rid of the bit of sand. The inflammation (i.e., the falsely-called disease) in short is a *conservative process*. It proceeds somewhat as follows: the blood rushes to the spot where the bit of sand is imbedded with such force that the blood-vessels around it are completely *clogged up*, or blocked up with red blood-corpuscles. You might as well have sent a whole army of red-coated cavalry at a gallop to pass at full speed along the Strand, or through Temple Bar blocked up by an omnibus,—they cannot do it, they are stopped by the narrowness of the street, which becomes more and more narrow, till it ends in the omnibus blocking up the gateway. They come to a dead stand, although the soldiers in the rear are still pressing on. The crush becomes so severe that the soldiers in advance are at last so jammed up that they *perish*. It is somewhat similar with the red blood which is jammed up all round the bit of sand—the blood perishes, and the parts immediately around the bit of sand die also: being dead, they

lose all hold of the living parts, they decay and drop off, but in doing so they bring away the bit of sand, and thus rid the eye of the source of irritation. The hole is then filled up by new and living structure, and the eye is perhaps no worse for the process. But the whole thing illustrates what we should call *the wonderful processes of disease*. In short, we cannot look upon it as disease at all. We perceive the same thing occurring all through the animal economy, although the source of irritation may not be a bit of sand, but some other foreign body, or poison, or depraved or perverted secretion, or excretion—such as the poison of fever, gout, rheumatism, and many other diseases. Instead of the bit of sand in the eye, suppose that the source of irritation is a quantity of sand in the blood, called gravel or lithic acid. Now the kidneys are the great cleansers or depurators of the blood. Their office is to keep the blood free from certain things which get into it, and which otherwise would impair and even destroy its usefulness. Amongst other things, lithic acid or gravel is frequently formed in this blood, and the kidneys set to work to get it away. But they often fail in doing this work, and the acid accumulates in the system. What is to be done? The skin would be willing to do its part to take it off, but the patient is unwilling to go through the exercise in the open air to enable the skin to act, and it refuses to act whilst the patient remains in the arm-chair or study; so the joints or the great toe come forward and offer to do the work, much to the joy and relief of the kidneys. The toe inflames and swells, and at last gets well. The patient is now quite relieved, and is better than he has been for months. He has been relieved of some *peccant humour*. This you will find deposited round the joint of the great toe. It is swollen: cut into it if the patient will consent to the experiment, and you will find the sand, which just before was in the blood, and making the man ill; it is in the form of a chalky product, (lithic acid combined with an alkali), which could be detected in the blood previous to the attack, but which has now disappeared from the blood, and found a place of rest round the toe. The same kind of irritation is found in several other parts of the body, especially in what are called mucous and serous membranes, which are evidently doing their best to assist the kidneys in their work. But do you call this *disease?* We call it *a wonderful vicarious process by which nature is attempting to get rid of something which is vitiating the blood.* The *symptoms* of gout are not the disease; the disease is that which is poisoning the blood. We at once attempt to cure, not by producing *symptoms* by means of medicine as similar to those of gout as we can, but by exercise, and fresh air and diet, and also by giving alkalies, such as potash, which destroy the acid in the blood. We do not give medicine to simulate the pains of gout or rheumatism, but to counteract the poison at its source; just the same as in the eye we pick out the bit of sand, so in gout we pick out the sand in the blood, which we cannot do with a lancet or needle, but which we can do with

alkaline medicines, which act remarkably on the acid which causes gout.

We are attempting now to illustrate the error of mistaking *symptoms* for what is called *disease*, and the error which runs all through the system of homœopathy, of pretending to generate a set of symptoms, which may be common to diseases of the most various kinds. We may have similar symptoms, very difficult to distinguish from each other, in functional diseases of the nervous system, and in those which are more inflammatory; in diseases which require good diet, and in those which require low diet; in diseases, in short, whose *symptoms* are alike, but whose treatment ought to be quite dissimilar and opposite.

Quite different diseases cause symptoms exceedingly alike. These diseases are not only quite unlike each other, but require quite different treatment. Now it is clear that, on the homœopathic principle, if you can by means of medicine, generate similar symptoms to a given disease, this medicine is the remedy. But how can it be the remedy for the two different diseases of worms in the bowels, and Bright's disease of the kidney? By referring to a paper in this volume, page 61, by Dr. Heslop, Professor of Medicine, Queen's College, Birmingham, the reader will find a description of the symptoms of worms, as connected with the nervous system. We find, amongst other symptoms, "pale complexion, obstinate headache, general neuralgic phenomena, senses dulled, skin dry, thirst, &c." Dr. Heslop then says, "There is the strictest similitude between the cerebro-spinal symptoms of some forms of Bright's disease and those attendant on worms—particularly the tape-worm. So close is this likeness, that in cases where I should otherwise have predicted the presence of worms, my mind has been suspended in doubt, until after the urine had been subjected to scrutiny." It is well known also that worms will produce other symptoms, such as of hooping cough, convulsions in children, hysteria with violent jactitations or profound repose, sudden insensibility without convulsions, violent laughter—all of which symptoms are relieved by getting rid of the worms. M. Wawruch, of Vienna, has noticed 206 cases of tape-worm. The following is his summary of symptoms:—"Dull pain in the forehead, giddiness, buzzing in the ears, dulness of the eyes, dilated pupils, emaciation, alternate loss and excess of appetite, cravings for particular articles of food, itching of the nose and arms, grinding of the teeth, &c., &c." Now, on the homœopathic principle, Bright's disease of the kidney ought to be treated by medicines which produce nervous symptoms, similar to worms; and worms ought to be treated by medicines which will produce nervous symptoms, similar to Bright's disease of the kidneys! But the regular physician goes to the root of the matter at once, with respect to the worms; instead of producing similar symptoms, he gives medicines which get rid of the worms, and the symptoms cease. A child or woman who had been treated homœopathi-

cally for such symptoms as are caused by worms, might go on for ever in this way without relief; whereas a single dose or two of turpentine, or kousso, or male fern, might relieve the symptoms at once. Every candid homœopath must at once see the force of this argument, which could be continued in numerous other cases. The argument may be summed up in a few words, thus—Where two or more diseases of diametrically opposite natures have particular symptoms almost exactly resembling each other, and yet are acknowledged to require quite *different* modes of treatment, it cannot be correct to treat them both in *the same way*, by generating symptoms similar to each. This is only one example amongst numerous others, of the unscientific and even absurd practice of treating symptoms, instead of the disease which causes those symptoms.

To assist nature to throw off a disease, does not consist simply in giving a medicine which in health would generate symptoms similar to the disease. This is a curious and serious mistake, which might appear plausible in some instances, but which in other instances would be foolish. For example, a man is attacked by a common cold. Now what are the *symptoms?* Shivering, or a cold skin, running from the nose, sneezing, &c. Now if you give medicines which in health would generate similar symptoms, you do not assist nature in curing the case; but if you have observed how, in another case, nature has cured, viz., by perspiration, &c., and if you thus imitate her, and generate a symptom which does not belong to the case, and which, in fact, is no symptom of a cold at all (perspiration), you easily cure your patient. We merely use this simple illustration, which might be extended to numerous other examples, to show that to give a medicine which will, either in health or disease, generate symptoms similar to a disease, is a very unscientific method of following out nature's mode of cure. Take another example, which, however, can only be understood by medical men, but which, we hope, the homœopathic physician will candidly consider. We allude to a case of disease of the mitral valve of the heart. The disease is in the valve of the left side of the heart; the blood is either obstructed in its course forwards, or is thrown backwards, and thus regurgitates. What are the symptoms? The peculiar systolic bellows murmur, most distinct towards the axilla, difficulty of breathing, lividity of the skin, intermittent pulse, a bilious or yellowish skin, with scanty and high-coloured urine. Now, let the homœopath try to generate such like symptoms in a healthy man, and then give the medicine in this case in order to cure or relieve his patient. Let him give a medicine which, in health, would cause difficulty of breathing, blueness of the skin, intermittent pulse, a yellow skin, or scanty urine, and see if he can relieve his case. He will utterly fail. On the other hand, what is the way in which nature will sometimes endeavour to relieve all this venous congestion? The secretions from the bronchial surfaces become loose and copious, mucus is copiously expectorated, bile finds its natural outlet into the

bowel, watery purging may come on, and the kidneys, being relieved of their congestion, begin to secrete urine. Now all these are not symptoms of the disease, for they may exist in many other dissimilar diseases. They are no more symptoms of the disease than the perspiration was a symptom of the cold. They are the efforts of nature to relieve both *the disease and the symptoms*, and we can assist her very materially. Give a single grain each (provided the urine is not albuminous), of calomel, digitalis, and squill, to act on the bronchial surfaces, the liver, and the kidneys, to be repeated occasionally either with or without the calomel, and at the same time give what is called a watery purge, composed of a little jalap and cream of tartar in a large quantity of cold water, or a small dose of Epsom salts in cold water, and you will relieve the patient in a rapid and extraordinary manner. The object is to relieve the venous congestion which exists all over the body, and you can accomplish this by very simple means, and almost always with success. We have here a beautiful example of the way in which the physician can assist nature—not by increasing or generating or simulating *symptoms*, but by imitating the way in which nature would relieve the patient if she could, and the way in which she does sometimes succeed. Let us, therefore, study these beautiful laws of relieving disease. Let us take nature, or the way which the Almighty has pointed out to us, as our example, and not violate her teachings, as is the way of some, or simply trifle with them, as is the way of others.

The common symptom of disease called vomiting, will serve again to illustrate how fallacious it would be to treat a *symptom* of a disease for the disease itself. A patient may be affected with vomiting from numerous causes; he may have taken too much, or improper food; or his stomach may be inflamed, so that it will not bear the contact of food; or the man may be seized with a fit of syncope (fainting); or he may have a disease of his brain, near the origin of the nerve which supplies the stomach with the power of movement; or he may have water or pus form in, or upon his brain; or, if in a female, she may have disease or something wrong in the ovaries or uterus. All these things may cause the same symptom which may be the most prominent symptom in the case; but simply to allay the vomiting, would not be to cure or treat the case. To treat these different diseases homœopathically, you must give a medicine in proper doses which, in the healthy man in certain other doses, would cause vomiting, such as ipecacuanha; but, to treat disease of the brain in this way would be a most dangerous nullity, it would be simply trifling with the case. Or, to treat a case of vomiting or sickness in the female by simply attending to that symptom, and neglecting the uterine or ovarian irritation, would be trifling with the feelings of the woman; and to simulate this irritation or disease of the womb or ovaries by giving medicine, would be not only impossible but absurd. Or, if the vomiting depended on cancer of the pylorus, or on pressure of the

left portion of the liver on the outlet of the stomach, would it not be equally improper to give medicine to simulate the symptoms, and impossible to give medicines to simulate the disease dpylorus or liver? We mention these things in passing, which ought to shake the confidence of the firmest believer in homœopathy, and make him suspect that his principles are erroneous and dangerous, when relied upon in the treatment of a disease. He may thus be led away to treat symptoms only, and entirely to neglect the disease which gives rise to those symptoms.

A very interesting and a very decided proof that the principles of homœopathy are erroneous, is the effect of the Woorara poison as an antidote to strychnine and a remedy for lock-jaw. This virulent poison, which is used by the Indians to poison their arrows, has been used successfully on the human subject in a case of lock-jaw or tetanus, by M. Vella, in the Military Hospital at Turin, during the late Italian campaign. He dissolved two grains in nine drachms of water, and applied this solution to the wound which caused the lock-jaw. This remedy produced a complete relaxation of the muscles. It is a direct sedative of the motor nerves, and an antidote not only to lock-jaw produced by disease, but also to strychnine, which causes symptoms almost exactly similar to lock-jaw. This will be seen by referring to Dr. Harley's paper in the Lancet for 1856, vol. 1., pp. 619, 647, and in our Retrospect of Medicine, vol. 34. p. 30. Here we have a remedy, the effects of which we can see and appreciate at once—a remedy directly allopathic, or antipathic, producing symptoms not like, but as unlike as possible, to the disease. Lock-jaw, or tetanus, *tightens* or *contracts* muscles; Woorara poison relaxes them.*

It is on the same principle that we can often, by remedies, rapidly cure an attack of asthma; take the following case reported by Dr. Salter:—"A poor woman was brought into King's College Hospital, supposed to be dying, quite unable to move or speak from the violent action of the respiratory muscles. The suffocation was of the asthmatic kind. I at once administered chloroform. After a few whiffs, the spasm began to yield. *In ten minutes after entering it she left the hospital well.*" (*Brit. Med. Jour. Oct.* 1, 1859, p. 794.) Now here is another case, in which we can see and appreciate the effects of a remedy. The woman is attacked with an affection in which the nerves and muscles of respiration are in a high state of excitement, almost amounting to spasm, and a direct sedative which relaxes spasm is given to her, and acts instantly. It is the same as if a man was tightening a rope by pulling it, and some one instantly laid hold of the same rope and *slackened* or relaxed it. The homœopathic principle would be to tighten or stretch the rope in order to relax it, (which in fact is a ridiculous Irishism); but when you want to relax it, is it not better to do it at once? In both tetanus and asthma, the muscles or ropes of

* For an account of the treatment of tetanus in the Turin Hospital, see Lancet, Oct. 1, 1859, p. 345, and to the 40th (the present) vol. of our Retrospect, p. 37.

the body are in a high state of spasmodic tension, and we have valuable remedies to relax them very rapidly. Even the effect of ipecacuanha in asthma and vomiting, which is so dwelt upon by some homœopathic writers, is quite misunderstood by them. Ipecacuanha and antimony act as powerful sedatives of muscular action, and relax both the muscular action of the bronchial tubes and the muscular coats of the stomach and the diaphragm, in cases of asthma and vomiting: thus, in fact, acting antipathically, when given in such doses as to prostrate muscular power. If you proceed cautiously with ipecacuanha and antimony, you may make them into beautiful sedatives of muscular action, and thus act both on the muscular coats of the stomach and intestines; and on the diaphragm and heart in many cases, such as pneumonia, gastritis, diarrhœa, &c.; but in these cases the remedy is truly antipathic. It directly contradicts the action of the muscles which is going on, and the action of which muscles, such as the heart in pneumonia, is keeping up a good deal of the mischief.

We have been a good deal interested and amused to see these singular mistakes of the homœopaths respecting the real power and specific action of medicines.

We come, then, to the conclusion, that in nearly all, if not all, diseases, there are the attempts of nature, or a wonderful conservative power of the constitution to correct something which is interfering with the regular working of its machinery. In many of those attempts nature will do the work herself—in others she is over-doing the work, and in others she is coming short; so that in the first case the medical man must let her alone; in the second he must arrest or regulate her; in the third he must assist her. This, we think, is the GREAT PRINCIPLE OF MEDICINE, which we can discern, but which, as yet, we cannot work out completely in all cases. Our duty is to investigate the first commencement of diseases of every kind, and to see how nature proceeds in her work; we have also to see how she works in perfect health, and next endeavour to take our lessons of practice from her own proceedings. We can, however, discern so much in this, that in many cases she has to be checked or arrested, in others assisted, and in others let alone. We consider that the practice of homœopathy is simply the last, viz., *to let her alone*. A man has imbibed the poison of typhus fever, his blood is poisoned by some unknown material, and becomes decomposed, and its corpuscles broken up, so that they escape in some measure through the sides of the blood-vessels; blood oozes out upon the internal surfaces of the body. Nature will get rid of the poison if the patient live long enough, but you must *help* her to keep the patient alive with ammonia, wine, brandy, and food. Or, in another case, the man is labouring under violent suffering from undigested food in the stomach, giving rise to all kinds of symptoms. The stomach cannot relieve itself, although it tries hard to do so. You give a gentle emetic of ipecacuanha, or mustard and water, and the relief

is rapid. In these cases you assist nature. In others you arrest her. For example, the inflammation in the lungs is from a bad cold; the blood has been driven from the skin and has collected in the lungs, the heart sets to work to pump the blood back again to the skin, but in doing so it has first to go through the lungs, which are already too full. The attempts of nature here are well meant, but they are misapplied. You arrest or regulate her. You give small doses of ipecacuanha so as to nauseate the patient, and thus temporarily to *weaken* the force of the heart. The heart, by so doing, does not act so powerfully. It sends less blood to the gorged lungs, and you have time to draw the blood to the skin by perspiration.—Or, perhaps the patient's bowels have been violently irritated by large doses of fruit in autumn. Nature carries off the irritating material, but cannot stop herself in the purging which she has caused. The case, therefore, ends in cholera or dysentery. You must, then, check nature. Give a little ipecacuanha to stay the violent action of the muscular coat of the bowels, and a little opium to modify or check its irritability, and you will soon cure the case.

Or, lastly, the man has simply got a bad cold and is very feverish. You put him to bed, strike off all high food, and give him one drop of water every two or three hours. This last method is homœopathy in infinitesimal doses!

This subject is so interesting, and throws such light on the unscientific character of homœpathic practice that we will dwell a little more upon it. The nature of disease is not sufficiently understood. It is this misunderstanding which gives the public such a mistaken idea as to the nature and effects of medicines. It is supposed that disease is necessarily a destructive process, which seizes on the body, and which must in the end destroy it, or at least the portion which is attacked. This is a mistake; almost all diseases which we can see and examine, are, in reality, attempts of the body to overcome some secret and unseen action or poison, which is working or existing in the system. Disease, in fact, as manifested to our senses, is nothing more than a deficiency or excess of a natural and wholesome operation.* In some cases we cannot explain this satisfactorily, but in other cases we can see the beauty of this explanation, and no doubt as our knowledge increases we shall be able to carry the illustration further. For example,† a man is attacked by a tumour in his eye, and the eye is gradually pushed out and spoiled; when examined, it is found that a parasitic animal (an hydatid) is within the diseased portion, and has given rise to all the mischief. But the eye bursts, and the animal is got rid of. The same thing may go on in the liver, where it cannot be got rid of so easily, as the patient often dies during

* When we use the term "Disease" it must be understood in the sense in which we have endeavoured to explain it in a previous page.

† We take some of these ideas from Mr. Simon's work on Pathology, published by Renshaw, Strand.

the process. In common itch, an insect is seen burrowing in the skin, and causing an eruption; or a vegetable may be growing on the skin, as in porrigo, causing a tiresome skin disease. In all these cases you seem to have what is called disease going on, but it is the body which is struggling against the attacks of animals or vegetables; it is doing its best to get rid of them.—Or, another man may appear to have disease of the kidneys or bladder. He may be making bloody urine in small quantity—the real mischief is that the kidneys cannot throw off the increased quantity of *urea* which is existing in the blood, and the man is being poisoned by it.—Or, two men may be making an immense quantity of urine—in the one we find sugar, as in diabetes, in the other turpentine, which the man has been taking as a medicine; but the symptoms are similar, and nothing more than an effort of nature to get rid of substances which are only intruders.

It is wonderful how well nature works to right the system when anything attempts to disorder it. She makes the strongest efforts to maintain the original *type* which the Almighty has given to it, and when anything attempts to destroy this type of construction and chemical constitution, she tries to recover it. If you bend a bit of whalebone or stick, it resists your force as well as it can, and will make strong efforts to resume its original shape when your hand is taken off. So in disease, the body *resists* offending causes, tries of itself to counteract them, and invites the physician or surgeon to assist her. If he refuse to assist her, she will often do it alone. "You have a type of shape for every part of the body, a type for the hand, for the face, for the brain, for the leg—a type of texture for organs, for nerve, for cartilage, for bone, for blood, bile, urine, sweat."—(*Simon's Pathology.*) In short, disease is generally nothing more than a modification of healthy action either in excess or deficiency. In the first you have to arrest or check it, in the latter to increase or excite it. For example, in cyanosis the child is blue because the heart has been arrested in its development, and in hypertrophy the development has gone too far; in hare-lip, again, the part was arrested in its growth; and in old men the cartilage which gave rise to their elasticity in youth has become bone—but it is only in obedience to the laws of nature, you cannot call it disease.

When we view disease in the light which we have been attempting to explain, we cannot but be struck with the laws of preservation which the Almighty has implanted in the organs of his creatures. He has not simply created these organs, and left them to take their chance, but he has implanted such a wonderful power in each organ to preserve its own shape and function, that even after what is called an attack of severe disease, it will make strong efforts to recover its original *type* of shape, texture, and function. So, to use the beautiful words of Mr. Simon, "We find that disease works according to laws definite, constant, invariable; we find in it no contradiction to the laws of life; on the contrary, that the latter, in their simplicity and

comprehensiveness, include and account for it; that the power of adaptation to circumstances, the power of resistance to casualties, the power of repair after injuries, would not be possible or conceivable attributes of the human body, except under conditions which impose the liability to disease. At every turn of the subject, and in every fresh illustration which new study reveals to us, we derive deeper and more stedfast convictions of the total absence of caprice, chance, or irregularity, even in the strongest influences of disease. We become habitual observers of that mystery which most of all tends to chasten and to elevate the mind—observers, namely, of the unbroken uniformity which prevails in the operation of natural laws. Standing, in the daily exercise of our profession, amidst an apparent chaos of darkness and suffering, where at first all seems, as of yore, to be 'without form and void,' it is our great privilege, that, by the aid of scientific insight, we are raised to a recognition of the 'Spirit which moves upon the face of the waters,' and which, now, as in the first morning of creation, resolves that chaos into harmonious order, that darkness into intelligible light, that suffering into the feeble counterpoise of some greater and more extensive good." (*Simon's Pathology*, p. 17.)

Nature, in fact, works from a model. There is nothing more interesting than to observe nature in her processes both in health and disease. You have a child in infancy totally unlike its elder brothers, but watch its growth and you will see it gradually assuming the *type* of the family; particle by particle is added to its body, feature to feature, till the growth is completed; and then say whether the living statue has not been copied from another statue by a wonderful *sculptor*. In fact nature is the sculptor, and she has worked after a model with mysterious but correct power. So in disease, a part is disorganized by what is called disease, but nature is still the sculptor. She has not forgotten her model; she replaces the lost or disordered portion by parts which she models as nearly as possible like the original parts. She often fails, but her efforts are beautiful; and in some of the lower animals she quite succeeds. In these, a limb may be taken off and she will replace it by a new one resembling the original. It is the same effort all through the human body, which we call the conservative power of nature, an attempt to recover the original type, which disease may be attempting to destroy. We perceive this in the more severe. as well as in mild disorders. The disordered operations, then, of the human body are generally nothing more than its attempts to regain the path of health from which some cause has caused it to swerve; nature often succeeds without any aid—at other times she fails. The art of the physician is to watch her efforts, to *assist*, to *check*, or to *modify* them according to the best of his judgment.

Diseases attack the body either from without or within. For example, malarious poisons from without, or poisons formed within the body itself. They are known by their symptoms

and effects, such as venous congestion, or dropsy from heart disease. The internal organs are like the crew of a ship in a storm, and instantly attempt to avert or throw off disease when it approaches. The storm may rage and the ship may give symptoms of the danger. The sails may be rent, the masts may crack, the deck may be flooded, and the fire of the engine may be damped. These are *necessary* symptoms and effects of the storm. But observe the crew: the sails are regulated, the steam of the engine is got up, the pilot is at the helm, and the compass is watched. These symptoms or effects are *not necessarily* connected with the storm. They are only an increase of the activity and watchfulness of the crew, which exist when there is no storm at all. To generate, or simulate, or aggravate the symptoms which are necessarily connected with the storm is a *bungling* kind of way of getting out of it; but to regulate the symptoms or activity of the crew, and to direct those symptoms or operations *which are not necessarily connected with the storm*, but which may exist at all times, is a beautiful and scientific object. Let the captain (the physician) therefore, *direct the crew*, furl or unfurl the *sails*, *get up the steam*, *pump the water* from the ship, keep her guided by the compass, avoid the rocks and shoals on all sides, *retreat or advance her according to circumstances*, and in 96 cases out of every hundred you will save the vessel. We must therefore be careful to distinguish between *the symptoms or effects of a disease*, *and those natural and conservative powers which throw off disease*, *but which are not necessary accompaniments nor symptoms* of the real disease, as these last symptoms, which we may call *conservative symptoms*, exist in the body at all times, even in a state of health. *The symptoms of disease can only exist as the consequence of disease. The conservative symptoms or powers can and do exist independent of disease. To increase or generate symptoms similar to the disease* is only *increasing the mischief. To assist or regulate the conservative powers*, so as to throw off the disease, is a beautiful and scientific principle, and worthy of a noble profession. It is an attempt to imitate those laws which the Almighty has placed in the body for its preservation. This we consider to be *the true principle of medicine*, and is gradually exalting the principles of medicine into a *true science*.

To prescribe for *symptoms*, therefore, and especially to endeavour to generate a similar set of *diseased* symptoms, is to sail across the Atlantic without a magnet, and simply to accommodate the ship to the wind. What would be thought of a man who attempted to cure a child's legs which had become bowed and crooked for the want of lime in the bones, by applying irons or supports to his legs, but neglected to give the child phosphate of lime to strengthen his bones. Simply to apply artificial support would be called *empirical*, prescribing for symptoms without a real principle to guide us; but to give the lime is a scientific thing. The same principle applies to spinal diseases.

We might go on for pages illustrating the error and want of real

science, and even danger, of thus mistaking *symptoms* for *disease*. No doubt the most scientific man is often at a loss how to account for the symptoms before him, and, when so, he must submit to the humiliation of confessing that he can only make use of an *Art*, and prescribe for his patient according to what experience has taught him to have been useful in similar cases. But this empirical method is fast disappearing from amongst all well-informed medical men, and *art* is rapidly giving way to *science*.

In the previous remarks we have shown what an excellent physician Nature is, and that the recovery of a patient from sickness is no proof that the medicine given was the cause of the recovery. It may have been useful or not; but when we hear a patient say that he was attacked by illness, and recovered *after* taking certain globules or certain drops like water, and *therefore* his recovery must have been owing to these remedies, we are struck with the ignorance both of the patient and his medical adviser respecting the nature of disease, and respecting the wonderful powers of the constitution to throw off illness, even when unassisted by curative means. It reminds us of the sailor who whistles for a fair wind and if the wind becomes favourable *after* his whistle, he has the impression that the whistle caused the wind to change,—it is the common "*post hoc propter hoc*" argument.

Success in medical practice does not necessarily prove the truth of a professed principle, unless we can be absolutely certain that the principle is strictly adhered to. There is nothing more common than for one physician to be more successful in his cases than his neighbour; both may be professing the same *principles*, but each differs from the other in his *practice*: in short, success in practice depends not only on a good knowledge, but on a certain ability, or talent, or *tact*, to bring that knowledge into exercise, so if a homœopathic physician likes, he can treat his cases either homœopathically or allopathically, or in any way he thinks fit, and all the time pretend to be a homœopathist. His homœopathy may be made a cloak to do just as he likes. Medicines are now made in so concentrated a form, that a drop or two may be a full dose. This may appear to the unprofessional man to be an infinitesimal dose, when given in a glass of water; but in fact, it is a full dose, and quite as large a one as a regular physician would himself give. Aconitina, Strychnia, Nicotine, Morphia, Atropine, are the essences of Aconite, Nux Vomica, Tobacco, Opium, and Belladonna, which every regular physician may use; but if he wished to appear somewhat wonderful, he might drop a very small quantity into a wineglass or tumbler and give it to his patient, with good effect—yet, he would in fact, be giving a full dose of the medicine. The dose might *appear* to be a homœopathic infinitesimal dose, but it would *appear* to be what it was *not*,—it would be a good dose. So that when homœopaths appear to be giving their infinitesimal doses, they may be doing so only in *appearance*. If a homœopathic physician practised in any way that he thought fit, and used any

medicine whatever, without any respect to his principles, (all of which things he might do with the outward form of homœopathy,) and if, at the same time, he were of equal or superior natural ability to his allopathic neighbours, we dont see but that he might be equally successful. But there would be this difference, that the homœopath would be practising with a certain degree of deceit, and using the term homœopathy as a cloak to carry on his practices. It is this conduct which we look upon with dislike, and particularly so, when, at the same time, the homœopathic physician advertises himself as carrying out a *New System*, founded on *New Principles*. The whole thing is considered by the body of regular surgeons and physicians as, to say the least, discreditable to a body of properly educated men.

Let us next examine more particularly the principles of homœopathy, and compare the *modes of treatment* adopted by the homœopath and the scientific practitioner. The homœopath, we repeat, prescribes for the *symptoms* of a disease—the scientific practitioner prescribes for the cause of these symptoms, or tries to *regulate the conservative powers* of the constitution. Toothache is a symptom of a decayed tooth. Whether is it better to prescribe medicine to relieve the pain, or to attack the cause and extract the tooth at once? The homœopath would give medicine which, in a healthy man, would cause symptoms similar to toothache; the scientific practitioner would extract the tooth. The homœopath, when called upon to relieve a neuralgic pain, would give a medicine, if he could find one, to cause similar symptoms in a healthy man; the scientific practitioner would remove the cause if he could find it, and if he could not, he could easily relieve the pain by opium, or morphia, or aconite, or belladonna, and better still in most cases, by chloroform, either gently inhaled, or applied to the surface. All these medicines have a remarkable power of relieving pain, but they will not cause it when used in infinitesimal doses, nor in any doses at all—and yet homœopaths use these medicines in violation of what they call an infallible law or principle.

The great principle of homœopathy is, that whatever medicine given to a healthy man will cause in him symptoms similar to any disease, that medicine will cure the disease in the sick man. But is this the fact? Hahnemann states that Peruvian bark cures ague, because, when given to the healthy man, it causes symptoms similar to ague. This we deny altogether. How many people take quinine (made from bark) both in small and large doses, and we never hear of them having symptoms of ague! It is a curious fact, that when a person goes into a district infected with the poison of ague and other malarious fevers, he is nearly proof against all the symptoms if he take quinine for a certain time before he goes into the district, and for 14 days after he leaves it. This is well exemplified in a report lately issued by the expedition just returned from the Niger river, as will be seen at p. 648 of the Lancet, Dec. 18, 1858.* It is not a fact,

* Dr. Livingstone, in his present expedition in Africa, does not find the same power in quinine to avert malarious fever. (See *Med, Times and Gazette*, Nov. 12, 1859, p. 473.)

therefore, that Peruvian bark produces symptoms of ague in the healthy man, but *just the reverse*—it prevents all symptoms from even showing themselves.

You could not have a more forcible example of the difference of treatment between one system and another than in the subjoined case of the treatment of tetanus. Tetanus, or lock-jaw, consists in the rigidity of almost all the muscles of the body; it can be accurately simulated by giving a healthy man strychnine. The symptoms of poisoning by strychnine are exceedingly similar to the symptoms of lock-jaw. The homœopath ought, therefore, to have a certain remedy in strychnine. Exactly the reverse is the case, strychnine aggravates the symptoms, and was obliged to be given up; but aconite was found to cure. Now aconite prostrates and relaxes muscles, and never contracts them. In one of our previous volumes will be found a case in which chloroform was useful in relieving convulsions, and another case in which tobacco or nicotine was used with success in tetanus or lock-jaw. But all these remedies are exactly the opposite to strychnine, and every candid homœopathist must at once acknowledge that his principles are completely broken down before such examples of cases. The subjoined is an extract of the case treated by strychnine and aconite. It will be found in detail at p. 70 of the 39th volume of our *Retrospect*. Henry Blackwin, aged 15, was attacked by tetanus, Sept. 16, 1858, and admitted into the Middlesex Hospital. His symptoms became more marked in two days, and were gaining ground. One tenth of a grain of strychnine was given every two hours, and continued in varied doses till the 20th, when "the symptoms were now becoming so urgent that the strychnine treatment could not be longer tried. It was evident that though it was producing its own specific effect, the paroxysms of the disease were in no way relieved, nor were the chronic spasms at all diminished." (p. 72, *Retrospect*, vol. 39.) The patient was now put upon aconite in five minim doses every two hours, with an aconite liniment; this was assisted by an ointment of one part of extract of belladonna with two parts of opium rubbed into the thighs; "from this time the improvement was progressive, the countenance becoming more natural and the pain and anxiety diminishing." Another case is related in which the effects of aconite were still more marked; so much so, that by this medicine, "during the continuance of the disease, though at times he was alarmingly affected by the medicine, the severe tetanic symptoms were constantly subdued." (vol. 39, p. 74.) Another good case of recovery from lock-jaw (see *Retrospect*, vol. 38, p. 44) is given by Mr. Simon. Here nicotine (made from tobacco) was used. See also vol. 36, p. 38, where Dr. Hobart, of Cork, points out its value in tetanus, and also as an antidote to strychnine.

These cases of cure of lock-jaw by aconite, belladonna, and nicotine, are quite sufficient to overthrow all the arguments in the world, based on the theory that "like cures like." Here are cases fairly cured by

remedies, the specific effects of which are quite *dissimilar* from the disease. In lock-jaw we have the muscles rigid and contracted—the effect of aconite is to relax muscles; the same more especially is the effect of tobacco or nicotine, and belladonna. Make a person sick with tobacco, and see his relaxed and sickly frame—quite the opposite to rigidity—and yet this remedy cures lock-jaw, in which strychnine has been proved to fail. Yet strychnine produces symptoms very similar to lock-jaw, and ought to cure it if homœopathy be correct.

If one thing more than another could convince us of the error of homœopathy, it would be the use of aconite by homœopaths; perhaps the most powerful and favourite medicine which they use. They call it "*the Homœopathic lancet*, as it is the *great remedy for inflammation*." Dr. Sharp says that it is "a most valuable remedy in simple and inflammatory fever. It must entirely banish the use of the lancet, the leech, and the blister, in such cases." "In its relation to inflammatory fever it stands at present unrivalled." (*Tract*, No. 19, pp. 12, 13.) We agree with these remarks in many respects. It is a most valuable medicine. It is not duly appreciated nor understood. Nay, even the homœopaths themselves are at downright *loggerheads* respecting it. Mr. Everest, a zealous homœopath and friend of Hahnemann, says, that a true application of the doctrine of homœopathy "excludes the use of aconite in almost every case in which it is now employed by homœopathists." Mr. Everest further says, "I assure you seriously, that absurd as the old system is, it is not more injurious than this, viz., homœopathy as practised by British homœopathic physicians and amateurs." This contradiction is amusing: but we here quite agree with Mr. Everest, that the use of aconite by modern homœopaths is a direct contradiction of all their principles! For what is aconite? Let any candid homœopath refer to Dr. Fleming's Monograph on this medicine, the best work ever written on Aconite. Dr. Fleming says, "that its primary action on the nervous system is purely *sedative* in its nature from the first, and the closest scrutiny fails to detect any symptom calculated to warrant the belief that a primary stimulant action is exerted." Again, he says, that its action on the circulation is also sedative; "when this is fully developed, the flow of arterial blood to the brain is much diminished, an occurrence which impairs the energies of that organ, *in the same way as excessive loss of blood;* between which, and the action of aconite, there exists a very strong analogy." "The action of aconite on the *muscular system* is directly and powerfully sedative. (*Fleming on Aconite*, p. 26, 30.) These are not simple opinions, but are founded on a series of experiments of the most interesting kind;—and yet, here is a remedy of a most sedative character used by homœpaths in fevers, inflammations, &c., as a substitute for the lancet, leeches, &c. They could not possibly have used a more *antipathic* or *allopathic* remedy! Let them candidly consider this, and acknowledge it. Dont let them *pick out* one or two solitary symptoms from amongst nume-

ous others, which might seem to support their views, but let them take the general character of the medicine. In some medicines, when taken as poisons, you may have numerous symptoms of an anomalous character, and it is easy to select some of those symptoms so as to appear to give support to their views; but aconite, if viewed fairly, must decidedly contradict their principles.

We will give one more illustration, to show the error and danger of treating *symptoms* instead of the *disease*—*effects* instead of the *cause*. Apoplexy is caused by the rupture of a blood-vessel in the brain, and the blood escaping into the parts around the blood-vessel. Among the most important symptoms, we have what is called *coma*, a kind of stupor, with snoring and insensibility, resembling a man who is intoxicated, or one who has taken a large dose of opium. Both opium and alcohol, therefore, ought to be the homœopathic remedies. But how dangerous to use them in a man whose blood-vessels are already overloaded. When a water-pipe has burst in the street, and is deluging the surrounding earth with water, whether is it better to send more water along the pipe or to cut off the supply from the main-pipe or reservoir? The homœopathic remedies, opium and alcohol, if used at all, would send the blood still more to the broken bloodvessel—the lancet of the surgeon would stop the supply. We do not say that the homœopath *would* use opium and alcohol; we only say that as these agents produce symptoms in the healthy man resembling the coma of apoplexy, they *ought* to be the homœopathic remedies for such a state. Again, you see a man's eye angry and inflamed—you can produce this condition, the same as in the brain of an apoplectic patient, by giving opium or brandy: but, next time your own eye is bloodshot and inflamed, try a dose of opium or brandy, and see if it does not greatly aggravate the case. The next time your eye is in the same state, try cold water applied to it, take a little ipecacuanha to make you sickly, and thus to diminish the force of the heart, and the rush of blood to the eye, at the same time keep in a dark room, so as to keep off the stimulating effects of light; and strike off the supply of food, so that the quantity of blood made may be rapidly diminished, and see what effect this will have upon your eye.—You will soon see the difference of treatment, and be convinced of the error of homœopathy, and that after all the *old system* is not to be condemned.

When, however, we find in the standard works of homœopathy that common salt is said to cause 450 symptoms, oyster shell 1090 symptoms, the ink of the cuttle fish 1242 symptoms, common charcoal 930 symptoms, and that therefore all these symptoms of the medicines may be a guide to us in applying them to disease, we naturally shut the book, shrug our shoulders, and confess that we cannot argue any more with such people!

You cannot have a much better example how beautifully what may be called antipathic or allopathic treatment is illustrated, than in the treatment of acute rheumatism. Every one knows what the *symp-*

toms of rheumatism are; but the *symptoms* are not the *disease*, and however accurately you may be able to resemble rheumatism by giving medicines so as to generate similar symptoms, you will not cure it by this treatment. Now what is rheumatism? It is essentially a blood disease. The blood is found to contain a more than usual quantity of what is called *fibrin*, a material which chiefly composes, surrounds, and packs up all the joints, so as to strengthen them. This same material also exists in the valves and other tissues of the heart. Now, just look at the way in which nature or the powers of the constitution try to get rid of this *fibrin*, which is circulating in the blood to its great annoyance.—The joints are chiefly composed of this material: the joints during their growth in childhood constantly absorb this material for their sustenance and increase. They continue to do so all through life, and therefore, when there is an unusual quantity in the blood, they are expected to absorb an increased quantity, in order to relieve the blood. This they do, and it is this process, always aggravated by fatigue, which brings on the *symptoms*, pains in the joints, muscles, and tendons. But the heart itself is also a kind of large joint, and does the same work. The heart, therefore, is liable to the same disease. Now you certainly might *try* to treat this case homœopathically, and *attempt* to produce pain in the joints, or a heart disease, but in the first place you would fail, and in the second place, supposing even that you succeeded, you would aggravate the mischief already done, not because nature's removal of the fibrine is wrong, but because it is done in a manner which, though curing the rheumatic state of blood, injures the joints and heart. But if you give salts of potash, or bicarbonate of soda combined with nitre, you *dissolve* this fibrine in the blood, and wash it out through the kidneys, thus getting rid of the evil at once, and very rapidly curing the case.* Now we would ask the candid homœopathist if he can reconcile this with his creed. You might give potash and soda for ever and you would never produce symptoms of rheumatism—and you would never produce fibrine in the blood by giving these medicines. On the other hand, potash and soda directly and immediately dissolve the fibrine. They are beautiful antipathic or allopathic remedies. We do not by any means intend to say that excess of fibrine in the blood is the only change in that fluid pathognomonic of rheumatism, nor that alkalies act only by diminishing the excess.

Consider the danger of homœopathy to individuals attacked by disease, who have not been previously experimented upon *in health*, as to the effects of medicines. A person is attacked by disease; he sends for the homœopathic physician, medicines are prescribed and given; but who knows what are to be the effects? One great prin-

* See *Guy's Hospital Reports*, vol. v, 1859; and the present vol., p. 27.

ciple of homœopathy is, that every medicine must have its powers and effects tried on *healthy* people. But every healthy man differs more or less from another, and no medicine has the same effect on two or more individuals. But the patient's life is in danger, and may terminate in a very short time. In this dilemma, the physician must give medicines which he has only tried on *other* individuals: in order to be effectual they ought to have been previously tried on the patient himself *whilst in health*. This is one of the chief principles of the doctrine, and, consequently, when brought into practice at the bed-side, will almost always prove a broken reed to depend upon. The principle might be worth arguing if the same medicine had always the same effect on all individuals, but as it has hardly the same effects on any two people it is worth nothing. Even if the drug had a tolerably similar effect on twenty people, but not on the next five, it would be a great misfortune for one of the five to be attacked by a disease for which the remedy was quite inapplicable; and supposing that his life was at stake, we should consider it a dangerous principle to be depended upon.

Consider, also, the danger of trusting to this system of medicine under the following circumstances: "To effect a mild, rapid, certain, and permanent cure, choose, in every case of disease a medicine which can itself produce an affection similar to that sought to be cured." *(Dr. Dudgeon.)* You may generate *symptoms*, but you cannot generate the artificial disease which is to resemble the real disease. No homœopath has ever yet pretended to generate *diseases* by means of medicines similar to certain original diseases. What medicines can generate *diseases* similar to mitral valve disease; to a clot of blood on the brain from a ruptured vessel, as in apoplexy; to amaurosis or cataract of the eye; to the effusion of lymph or fibrin, as in croup; to a stone in the kidney or bladder, or to worms in the bowels; or to numerous other real diseases? You may attempt to generate some of the *symptoms*, but these are not the disease, and may exist in quite different diseases. To generate a symptom without also generating a disease is useless; the real cause of the artificial symptoms you generate is nothing more than a poison acting in certain ways on different parts, but very little resembling disease. But if you *could* generate an artificial disease resembling the real one, woe be to the patients labouring under numerous diseases, the least increase or aggravation of which would be destruction to them,—such as a fatty blood-vessel in the brain ready to burst; a thin heart also ready to burst; an amaurotic eye, nearly blind; an ulcer of the cornea, just ready to penetrate that structure; an aneurismal tumour; a blood-vessel in the lungs ready to burst; an ulcer in the stomach or bowels, &c. &c. It must be remembered that in all these and numerous other cases, in which life hangs on a thread, the homœopathic principle is that the artificial disease or symptoms will at first

rather increase the original ones. There will, in fact, be an aggravation of symptoms for a time, and this slight aggravation will soon decide the matter in many diseases. We must protest solemnly against the practice of such a principle in the treatment of disease, and hold those who do practice it as responsible for many grievous mistakes both in the diagnosis and treatment of disease.

The homœopathist says, that one great difference between his system, and what he calls the old system, is, that the medicines which he gives he first tries on himself; whereas, in the *old* system these are first tried on the patient. This is a misrepresentation. We deny altogether that the homœopath first tries all his medicines on *himself*—his system depends almost entirely on the effects of medicines on *others*. Dr. Sharp, who has particularly stated the above doctrine, informs us that the reason why belladonna is effectual in scarlet fever is, that "Belladonna, when swallowed as a poison, produces a scarlet rash, a sore throat, fever, headache, &c., all which symptoms appear in scarlet fever." He likewise states, in another page, that "The homœopathic physician learns the properties of drugs by experiments upon himself, not upon his patients." Let this gentleman say whether his assertion is to be depended upon. Has he tried belladonna in these doses upon himself? Has he tried the effects of all the medicines which he uses on himself? If not, is it worthy of him to make such an assertion to the disadvantage of those who disagree from him? Moreover, we assert that belladonna is very variable in its effects, and does *not* always produce the symptoms above-mentioned; it is even said that it produces these symptoms very rarely. We have been accustomed to prescribe belladonna for thirty years, and we never yet knew this drug to produce the symptoms above-mentioned. It is not the rule certainly; we could give many instances in which this effect was absent. The reader will find some very interesting cases of this kind related by Dr. Fuller. In several cases of chorea in which this medicine was given in large doses, (70 grains daily to one girl of 10 years old, or 1·019 grains in 26 days; to another girl, aged 14, atropine 37 grains in 18 days), no bad effects whatever followed, and "in no instance was there any feverish heat, or any *rash* or erythematous blush on the skin." (*Brit. Med. Journal, Aug.* 27. 1859, p. 704.) From some cause or other there was great *tolerance* of this medicine in these cases, but they were cases of convulsions. We mention the fact, however, simply to prove that belladonna does not counteract scarlatina, owing to what are called its homœopathic virtues, as these virtues or effects are very exceptional. And, by the bye, many of these cases of chorea were relieved by the belladonna. Now chorea is a convulsive disease, and the effect of belladonna is to *relax* muscular action—in fact, a direct opponent to spasm or convulsion. In chorea, therefore, it was beneficial as an *allopathic* and not as an *homœo-*

pathic remedy. The homœopath may say that in the above cases that disease existed, and therefore you could not judge of the remedy. In other cases, however, referred to in the same paper, it was given experimentally, but cautiously, to healthy children and adults, and still we find no rash produced.

One of the laws or principles of homœopathy is, that when a disease exists in the body, it can be cured by another disease with similar symptoms, provided the latter be stronger than the former, or, in the words of Hahnemann, "INVARIABLY, and in every case, do two diseases, differing certainly in kind, but very *similar* in their phenomena and effects, and in the sufferings and symptoms they severally produce, ANNIHILATE ONE ANOTHER, whenever they meet in the organism; the stronger disease, namely, annihilates the weaker." As an example of this law, the homœopaths state that an attack of small-pox destroys cow-pox. "*Small-pox coming on after vaccination, as well on account of its greater strength as its great similarity,* IMMEDIATELY REMOVES ENTIRELY *the Cow-pox homœopathically, and does not permit it to come to maturity; but, on the other hand, the Cow-pox when near maturity does, on account of its great similarity, homœopathically diminish very much the supervening Small-pox, and make it much milder, as Mühry (in Robert Willan, on "Vaccination") and many others testify.*" (*Organon*, p. 148.) This assertion of Hahnemann shows how carelessly and incorrectly some of his boldest opinions and matters of fact are adduced in proof of what he wishes to be believed. Will the reader believe it, that what Hahnemann here states is perfectly incorrect, and that Robert Willan, our celebrated English writer, asserts exactly the opposite? Dr. Willan's words (in his work on *Vaccine Inoculation*, p. 3,) are, 1. "That when a person was inoculated with vaccine and variolous matter *about the same time*, both inoculations proved effective; for the VACCINE VESICLE PROCEEDED TO ITS ACME in the usual number of days, and the maturation of the variolous pustule was attended with a pustular eruption on the skin. 2. That these effects took place, without much variation, in all cases where the interval between the two inoculations *did not exceed a week*; but, 3. That when variolous matter was inserted on the *ninth* day after the vaccine inoculation, its action seemed to be wholly precluded," (the system being now sufficiently fortified against it by the due protecting effects of cow-pox). So much for this opinion of Hahnemann, which proves just the contrary to what he states. We must do Dr. Sharp, of Rugby, justice in stating that he dissents from these extraordinary fallacies of the founder of his creed. He says, "Truly never was hypothesis based upon more slender materials; never did assertion and inadequate proof appear more conspicuously side by side than in these paragraphs?" We wish this estimable and talented writer had been

equally discerning to find out the other fallacies of his system. We still hope to see such a mind as his candidly acknowledging its errors.

Another principle of homœopathy is, that the effects of a remedy must not be *identical* with, but "as similar as possible" to the disease, or, in exact words, "In order," says he, that "the artificial diseases producible by medicines, may effect a cure, it is before all things requisite, that they should be capable of producing in the human body an *artificial disease*, AS SIMILAR AS POSSIBLE to the disease to be cured, in order, by means of this similarity, conjoined with the somewhat greater strength, to substitute themselves for the natural morbid affection, and thereby deprive the latter of all influence upon the vital force." (*Organon*, p. 133.)

The example adduced to support this law is, that if a person has on his skin an herpetic or miliary eruption, and he be attacked by measles, the measles cures the previous disease. But we perceive very little similarity between measles and herpes, or measles and a miliary eruption. We might as well say that small-pox and erysipelas resemble each other, because the skin is affected in both cases. Measles and herpes, if they counteract each other, do so for just the opposite reasons to what Hahnemann adduces. They counteract each other from their *dissimilarity*, and not on account of their *similarity*. This seems even to be the opinion of Hahnemann himself, for he goes on, curiously enough, to show how, in confirmation of his great principle of "like curing like," small-pox cures inflammation of the eye, amaurosis, deafness, difficulty of breathing, swelling of the testicles, and dysentery. It is almost laughable to see how the zeal of man will mislead him. What similarity have the symptoms of small-pox to the above-named diseases? We should again say, they are as dissimilar as possible, and only prove the weakness of such an argument. These cases of Hahnemann prove what has long been known to us, that it is difficult for two diseases of any kind to exist at the same time in the human body, and much more difficult for diseases of a dissimilar, than of a similar kind to exist together.

The homœopathic law which states "It is not possible to perform a cure *but* by the aid of a remedy which produces symptoms similar to those of the disease itself," is daily contradicted, not only by cases met with by the scientific modern physician, but by the homœopathist himself: and the very instance brought forward, viz., that ague is cured by bark, *because* bark produces symptoms similar to ague in the healthy individual, is quite contradicted by every-day experience, as we noticed in a preceding page. If this principle were true, we must, to be successful, possess medicines which would in the healthy man produce symptoms similar to all the diseases of the body. Now many of these

diseases we *can* simulate by medicines, such as the coma of apoplexy by opium; the delirium of inflammation of the brain by alcohol, Indian hemp, &c.; inflammation of the eye by a drop of oil of vitriol; inflammation of the stomach by arsenic; inflammation of the kidneys by Spanish flies;—but we would ask any candid homœopath if these would be proper remedies for the diseases themselves? On the other hand, we should like to know what medicines given to a healthy man will produce symptoms of typhus fever, consumption, scrofula, cancer, and a host of other diseases—and if the above quoted dogma be true, and if we cannot produce these symptoms in the healthy man, then we do not possess any remedies for this host of diseases on the homœopathic principles. Moreover, facts are against this hypothesis, as, for example, in *sea scurvy*. You cannot by any known medicine produce the symptoms of sea scurvy in a healthy man, and especially not by lemon-juice,—but let a sailor be attacked by sea scurvy, and let him have lemon-juice, and you will soon see the good effects. Again, you cannot produce *goitre*, or swelled neck, in a healthy woman by any known medicine, and especially not by iodine, —but this is cured by iodine. It is urged, with apparent plausibility, that nitrate of silver causes inflammation in the healthy eye, and cures it in the diseased one:—but oil of vitriol, a bit of sand, a hot iron, caustic potash, violent winds, and many other things produce a similar kind of inflammation—but do not cure it. Inflammation of the eye consists in a *dilatation* or swelling of the blood-vessels, so that these vessels admit a larger quantity of blood than in health—nitrate of silver *contracts* these vessels and prevents all this blood from passing along them. The remedy, in fact, contradicts the disease so called—the disease is *dilatation*, the remedy is *contraction;* precisely the same as, in typhus fever, the disease is a poison prostrating the powers of the body,—the remedy is a stimulant, such as brandy or ammonia.

The assertions of homœopathic writers have no doubt shocked some of the more sensible disciples, but they prove that there is no unity either in the ranks or practice of this system. One writer says, "If the remedy given be homœopathically selected, it *will* cure in whatever dilution it may be administered." (*Brit. Journal of Homœopathy*, vol. 5, p. 532.) So that, whether a drop of tincture of aconite be mixed with a hundred drops of water, or in a lake 250 miles square, it *will* cure, if selected homœopathically! But other writers and practitioners differ; for in the same work we find that with respect to doses, "There is no homœopathic question in which there exists greater discrepancy of opinion. In fact, we may almost say there are as many opinions as practitioners, and each is prepared to prove the superiority of his own by an imposing array of cases." (*Ibid*, p. 257.)

This contradiction of opinions amongst homœopaths is equally strong with respect to the medicines used, as well as the doses. Thus, Hahnemann considered that aconite was chiefly useful in pure inflammatory fever, and one or two other disorders; but others use it indiscriminately in chronic and acute diseases, and so commit, according to Mr. Everest, one of their disciples, "most extensive mischief." Thus, in Dr. Hempel's Domestic Homœopathic Physician, we find that aconite is used in almost all affections, "from nettle rash to consumption, from toothache to apoplexy, aconite is the principal, the best, the infallible remedy." Again, Hahnemann maintains that arsenic is the true specific for typhus, while Dr. Wurmb maintains that it is of use whatever in this disease.

The homœopath asserts that his medicines have not been fairly tried by the regular physician. This assertion is incorrect. There is not a more respectable man anywhere than M. Andral, of Paris. Dr. Marsden, a homœopathist, speaks of him as the "prince of physicians." M. Andral tried the system on 130 or 140 patients, in the presence of the homœopathists themselves. In describing the results, he said, "he was decidedly opposed to the project of allowing the homœopathists a dispensary: humanity should not be trifled with by the experiments of these people. He had given their system a fair trial; he had treated above 130 or 140 patients homœopathically, *in presence of the Hahnemannians themselves.* M. Guibourt had prepared the medicines; and *every* requisite care and precaution were duly observed: yet in not one instance was he successful. He had tried various experiments on his own person, and several other professional friends had followed his example, in order to ascertain the actual effects of the homœopathic doses; but the results were not as Hahnemann and his disciples described them. He (M. Andral) had taken quinine in the prescribed globules, but had contracted no intermittent fever; he had taken aconite, but without being affected with symtoms of plethora; sulphur he took, to try if he should catch the itch, but he caught nothing; neither, upon swallowing certain globules of arnica, did he feel pains as if he had suffered contusion: and so with various other substances which he and his friends took in obedience to the Hahnemannian precepts. With respect to the attempt to cure disease by this method, he said that in every instance he was obliged to return to allopathy, inasmuch as under the homœopathic treatment the symptoms went on from bad to worse." (*Dr. Simpson*, p. 275.)

"A German homœopathist (observes Dr. Lee), practising in Russia, was invested by the Grand Duke Michael with full powers to prove, if possible, by a comparison of facts, the advantages of homœopathic measures over the ordinary modes of treatment; and a certain number of patients in the wards of a military hospital were intrusted

to his care. At the expiration of two months, however, he was not permitted to proceed further. For, in comparing results, it was seen that within this period, out of 457 patients treated by the ordinary means, 364, or three-fourths, were cured, and none died; whereas by the homœopathic method, tried on 128 patients, one half only were cured, and five had died." (*Dr. Lee's Homœopathy, p.* 26.) The Russian government, it is further stated by Dr. Lee, tried in two hospitals the comparative treatment of a number of patients with homœopathic globules, and a number of other patients with no drugs of any kind; and the results were found very similar in both instances.

The medical council therefore recommended that the homœopathic treatment should be discontinued for the following reasons:—

"1. Acute diseases require energetic means of treatment, which are not to be expected from homœopathy. 2. The homœopathic treatment of external lesions and surgical diseases is altogether out of the question. 3. Some slight affections get well while under homœopathic treatment, but similar affections disappear equally well, without any medical treatment, by the adoption of an appropriate regimen, good air, and cleanliness." (*Dr. Lee's Homœopathy*, p. 27.)

At Naples, too, a commission was appointed to examine this system, and came to the conclusion—"1st. That the homœopathic treatment produced no effect. 2ndly. That it had the serious inconvenience, in several of the patients, of preventing the employment of remedies by which they might be cured." (*Ibid*, p. 29.)

Dr. Lee further states, at p. 20, "in looking over the history of several of the cases treated at the London Homœopathic Institution, I found, what might be anticipated, that they were very analogous to the above, viz., the ordinary slighter ailments usually met with in dispensary practice, which seldom require a long treatment, though most of the cases reported in the Homœopathic Annals required two, three, or four months attendance before the patients were dismissed." Again, "we have had, I think, sufficient proof that disorders and diseases are of much longer duration under the homœopathic than under appropriate allopathic treatment, and also, that in acute and serious diseases the mortality of patients homœopathically treated greatly exceed that of those treated by the ordinary appropriate means." (p. 21.)

In conclusion, therefore, we consider that homœopathy is unscientific in principle, and, as just shown, unsuccessful when applied to the treatment of disease, and leaves the case to the unaided powers of nature, sometimes even increasing the disease present, or entailing a lingering recovery.

140.—ON THE INFLUENCE OF VITALITY UPON THE EXCRETIONS.

By Dr. T. INMAN, Liverpool.

[In the present paper Dr. Inman calls the attention of the profession to the influence of a debilitated condition of the system upon secreted and excreted matters.]

All of us are more or less familiar with the fact that the excretions do not decompose, as a general rule, while they are in the body. The fæces, retained though they be sometimes for days, and in some rare cases for weeks and months, in the colon or the rectum, do not decompose there, as they do when they are expelled from the body; and this observation holds good, even though the bowels are distended with flatus, and the fæcal matter is in contact with a gas differing in no degree from common atmospheric air. The urine, when retained in the bladder, becomes denser, and undergoes some change; but it does not decompose in the same manner in the interior of the body as it does when expelled therefrom, and kept in a close well-stoppered bottle. We account for this by saying that the excreta have a certain vital power as long as they remain in the body, which enables them to resist the ordinary laws governing the inorganic world.

But we know from experience that the vital power does not immediately leave a limb after it has been amputated; and it becomes, therefore, a question whether vitality may not also remain in excretions for some time after their expulsion from the body. In other words, do the excretions lose their vitality as soon as they are expelled? or is there a period during which they successfully resist chemical laws? And, if such period exist, is it definite for all? Do the excretions of some decompose, *cæteris paribus*, sooner than those of others? and, if so, can we associate that phenomenon in any way with the condition of the individual at the time?

My attention was first called to this subject in the following manner. When M. Ledoyen came to Liverpool, about twelve years ago, to demonstrate the deodorising power of his "disinfectant" fluid, with other experiments, the following was made. The alvine dejections of a certain number of patients, ill with fever and various other diseases, were all placed side by side, to the number of thirty or more, in a small room attached to the pauper hospital. They remained all night in the chamber, and the next day M. Ledoyen commenced operations. After demonstrating the general advantages of his compound, he proceeded to sprinkle a few drops of his diluted mixture into each utensil. The amount used was the same in each case; but the appearance produced varied immensely; and, according as the chemical change was excessive or otherwise, he judged of the condition of the individuals who had passed the "motions". "This patient," he would say, "is not very bad; that one is seriously ill; this one is dying; this one is nearly dead;" &c. As his observations were correct, he

was asked how he judged of the danger the patient was in? His reply was, "that he had found, in the course of his experiments, that fæces decomposed rapidly or otherwise, according to the debility of the individual passing them."

For a long period, the principle here enunciated seemed to belong to the class of interesting but useless facts. More recent observations have, however, shown that it may be turned to good practical account.

If any one will diligently consult the napkins used by infants, he will find that, during the time the motions are of a good healthy yellow colour, they have a peculiar odour, which they retain for twelve hours at least; but if, from any cause—*e. g.*, debility in the nurse, or inappropriateness of the food—the child loses its healthy condition, the motions not only change in colour and consistence, but in smell, and decompose in a very short time after being passed. Where there is diarrhœa and excessive depression of the vital powers, the motions are often found to be decomposed in a few minutes. We may notice, too, that a similar result is met with at the same time in the other secretions of the child; and that the urine decomposes quickly, and the breath is foul or sickly.

But it is not in children alone that this change may be detected: it is equally evident in adults. If, for example, the doctor is called to attend a case of diarrhœa, where there is always more or less debility present, he may consider it necessary to inspect all the alvine discharges that take place. His visits are at intervals of twelve hours only; and he has on each occasion placed before him perhaps as many as six motions in different utensils. He is probably struck with the different odour exhaled from the various specimens, and notices a difference in the colour; but a few words from the nurse soon explain the mystery. The dark brown stinking ones are those passed the longest period ago; the healthy looking and smelling ones are those passed only a short time before the doctor's visit.

Simple though this fact seems to be, it is one which is not universally acknowledged and acted on; I have known "motions" which have simply become decomposed taken for "foul secretions", and the patient dosed with mercurials, under the impression that they would improve the condition of the bowels. The result has been what might have been anticipated; the patient has got weaker, and the bowels no better. The following case came under my notice some time ago. It is valuable as illustrating the danger resulting from inattention to these points.

An elderly gentleman was under treatment for indigestion. He was improving upon a tonic plan of treatment, when he was induced by his friends to have "a second opinion". When the physician called, he was shown a motion which had been passed twelve hours before. It had undergone decomposition, and was pronounced to be extremely "vitiated"; and, with the intention of improving the secre-

tion, a mercurial alterative was prescribed. This acted freely; and when the visit was made the next day, the motions were all inspected, and as that passed the last seemed to be the most healthy, the natural conclusion was that the medicine had done good. It was therefore persevered with; on the next occasion, and for some time subsequently, only the last motion passed was inspected, and, as it had not had time to be decomposed, it was thought to be healthy, and the patient was supposed to be "better", as his secretions were no longer "vitiated". But, notwithstanding this opinion, it was clear to the first attendant that the man was getting more feeble and debilitated day by day. If the medicine did improve the secretions, it certainly impaired the strength. It was then doubted whether the first inference was correct; and, to decide this, the nurse was directed to save all the "motions", and arrange them in the order in which they were passed. When they were inspected, the same order of things was noted as at the first examination; but the older ones appeared more vitiated than ever, and the most recent ones had begun to change in colour. It was interesting to know how the same fact struck the two doctors. One remarked, "that with such excretions, there was greater necessity for an alterative than ever"; the other said, "that seeing such had been the effect of the alteratives which the patient had already taken, the sooner they were suspended the better." This led to a warm debate, which was ultimately decided by an appeal to the nurse. Thus: "Nurse, which is the last motion passed?" "This" (the healthy looking one). "How long has it been passed?" "An hour." "What was the appearance of the other motions when they were passed?" "They looked precisely the same as the one first referred to." "Then they have all changed in appearance since they were placed here?" "Yes." "Do the motions change in appearance now more rapidly than they used to do?" "Yes." This confirmed the idea that the "vitiated character of the excretions" was, so to speak, a *post mortem* appearance, and simply indicated a smaller amount of vital force (as opposed to chemical) than is usually possessed by vital products when separated from the body. The termination of the case showed the justice of this view, for the patient's strength continued to diminish, and he died shortly afterwards of pure debility and exhaustion. It is useless to speculate upon what might have been the result had the phenomena been read correctly from the first.

As decomposition takes place in the alvine secretions very rapidly in fevers and all diseases marked by great debility, the practitioner must ever have his attention alive to the fact, that what he calls "vitiation" may be more apparent than real, and a sign which calls for stimulants and strengthening remedies rather than mercurial alterative medicines, whose invariable effect is to make a weak patient weaker.

The excretions of the body being comparatively few, and for other reasons, we cannot prosecute our inquiries into the influence of vitality.

upon them in the same way as we did concerning the function of secretion. We are not in the habit of requesting our patients to retain their saliva, their tears, their leucorrhœal or catamenial secretions, &c., for our inspection; consequently we know little about the phenomena of decomposition in these fluids and the changes effected thereby.

There are, however, two other excretions with which we are tolerably familiar; namely, the breath and the urine, respecting which we may say a few words. As a general rule, we know that the breath of healthy children is free from any odour perceptible to our senses; and we may say the same of that of healthy adults. But as soon as a child begins to suffer from debility, we know that we can recognise in its breath a variety of unpleasant smells, which we designate as sour, sickly, or putrescent. These odours are increased in intensity and duration by every cause which tends to augment the existing debility; and they go away as soon as the health is restored. In adults, the influence of debility in producing "foul breath" is very remarkable. I know individuals in whom it is invariably produced by a day's fatigue, by the occurrence of the catamenia, or by the too prodigal use of aperient medicines. In these instances, it is cured by wine, tonics, and rest, as certainly as diarrhœa is checked by opium, &c. In others, it comes on in consequence of indulgence in such passions as anger, or from excessive fear, anxiety, and disappointment. In others, it precedes and accompanies asthenic indigestion, and in them a debauch is as surely followed by foul breath, as it is followed in others by nausea and headache. Of course, it may be argued that this foul breath is not due to decomposition of the expired air after it leaves the lungs, but simply to the exhalation of "crudities" already existing in the blood. I acknowledge the force of the argument; but it matters little which solution we accept, so long as we recognise in such phenomena the presence of impaired vital force, and the necessity that exists for adjusting the work to be done to the constitutional power to do it.

There can be no such difficulty respecting the urine. Under ordinary circumstances, this excretion continues for about four-and-twenty hours, without undergoing any perceptible decomposition; but when the individual passing it is weak, decomposition takes place with a rapidity varying according to the amount of debility present; nay, we may go further, and say that in some instances—as in paraplegia, where the vitality of the kidneys and bladder is very low—the urine is actually decomposed ere it leaves the body. The decomposition is recognised in various ways: by the smell, by the occurrence of vegetable growths, vibriones, torulæ, &c.; by the abundant formation of ammoniacal salts; by turbidity, &c.

It is scarcely necessary to remark that we are fully alive to the fact that atmospheric conditions have a great influence in promoting the rapid decomposition both of urine and fæcal matter. What we want to call attention to is, that if on a cool day and in a cool room the

urine of a patient shows evidence of decomposition in twelve hours, it is evidence of a debilitated condition of the bladder, the kidneys, or the system generally. As such conclusion seems very dull and meagre however, when thus announced, we will endeavour to point it by recording the case which determined the writing of this communication.

A medical friend sent me a bottle of urine, with the laconic request that I would give my opinion upon it, and my views of the treatment to be recommended. The sole information he imparted to me was, that it was passed that morning by a boy about ten years old. After allowing the fluid to stand for some hours, it was examined microscopically and by simple chemical tests, &c., but nothing wrong could be found with it, except that it had begun to decompose. The first impulse was simply to communicate that fact to my friend, and leave him to draw his own inference; but as it would be an useful mental exercitation to put down the conclusions which might be drawn from that fact alone, I resolved to give an account of the symptoms that I thought the case would present.

The following was the train of argument: As there is an absence of much vesical mucus, triple phosphates, &c., there is presumptive evidence against the idea of vesical or renal disease. There is then general debility; and the presumption is that there will be debility in all the organs of the body, and consequent disorder of function. The signs by which deficient vital power in the brain and nervous system, in the respiratory, digestive, cardiac, and other sets of organs, might generally manifest itself, were then mentioned; and the note ended by recommending a strengthening plan of treatment. In reply to this communication, my friend reported that not only were the symptoms correctly described, but that some had been mentioned in the note which had not been recognised before its receipt. The plan suggested tallied entirely with his own views, and he felt his hands proportionally strengthened thereby.

The practical conclusion to be drawn from the foregoing observations is obvious. If the physician finds that the excretions of any of his patients decompose more rapidly than they would do during health (under the same external circumstances of light, air, and heat), he may feel certain that the vital powers are seriously impaired; and if under the treatment he adopts the decomposition occurs at an earlier period than it did before, there is reason to inquire whether such phenomenon is due to the augmentation of the disease itself or to the medicine administered for its cure. It will then be a subject for consideration, whether the plan of treatment is to be further developed in the same direction as before, or to be fundamentally changed.

Nor is this a matter of so slight importance as it might at first sight appear. Many seem to think that it is the simplest matter in the world to enable a patient to regain strength; and, consequently,

they care little about employing medicines which, while they reduce the powers generally, seem to have some special influence over particular organs. But it is by no means an easy matter to enable a patient to regain health; and any one who systematically endeavours to do so, will have to acknowledge that it is one of the most difficult problems in medicine. It is easy to reduce the strength, for that we have a host of drugs; but directly to increase it, we have literally none.—*Brit. Med. Journal, June* 11, 1859, *p.* 461.

141.—*On Tracheotomy.* By F. C. Skey, Esq.—[Mr. Skey made the following remarks on tracheotomy after operating on a child in whose trachea a tamarind stone was lodged. The stone was discharged through the opening by a sudden cough.]

Tracheotomy is an operation not very readily performed, and still less so when it is required to open the trachea low down in a child by gas-light. It is not always easy to hit the exact line of interval between the sterno-thyroid muscles, and this can only be effected by dissecting quite vertically from the surface, on which the outer wound occupies exactly the mesial line. When exposed, the trachea should be opened freely, without regard to the thyroid isthmus. Unless time be an object of consideration, (and it is rarely so urgent as to require the operation to be hastily completed,) any reasonable number of minutes may be devoted to the entire arrest of bleeding. The size of the aperture in the trachea will depend on the motive dictating the operation. If for the escape of a foreign body such as a plum or a tamarind stone, the opening should be large—in truth, as large as it can be made in a child of five years of age. In the case of this boy (as well as in that of a child operated on by Mr. Paget last year, who adopted my suggestion of considerably lengthening his incision in the trachea,) the opening was very large, extending, I believe, through at least five or six rings of the tube. I doubt the expediency of the attempt to remove the offending body by means of forceps of any description yet invented. Preferable is it to await the return of cough, which, in the act of expiration, will inevitably carry the foreign body with the current of air through the larger and the nearer orifice in preference to the smaller and more remote. Inasmuch as we are supposed to be acquainted with the nature, and therefore can form a tolerably accurate idea of the size, of the foreign body, we can in some measure judge of the magnitude of the opening required for its escape. I am not aware of any great increase of danger or difficulty created by the division of a greater over a less number of rings, or, in other words, in making a large opening instead of a small one.—*Lancet, Aug.* 13, 1859, *p.* 160.

142.—ON IDIOSYNCRASIES.

By T. W. NUNN, Esq., Assistant Surgeon to the Middlesex Hospital.

Instances of the poisonous effects, on certain constitutions, of drugs ordinarily of moderate action, are not unfamiliar in medical practice. Ipecacuanha is perhaps one of the best examples of the drug that, even in a state of the minutest subdivision, is capable of producing, idiosyncratically, extreme results. But some articles of diet also are, to individuals, poisonous: a numerous class of persons might be easily found, the members of which could not take, without inconvenience one or other of the various alimentary substances. There are, doubtless, scattered over the field of unrecorded medical experience, very many interesting and curious examples of this idiosyncratic incompatibility or susceptibility. The production of spasmodic asthma seems to be the most frequent symptom of idiosyncratic poisoning. Irritation of the mucous and cutaneous surfaces is also a common one; direct influence of a severe character on the nervous system, a rare one.

The object of this communication is, however, not to discuss the physiological questions which naturally arise in the consideration of such a subject: it is rather to offer an instalment of facts. I am the less willing to submit any theory on such a purely medical subject, since I have perceived that Dr. Hyde Salter (from whose able pen much information may be expected), in his paper on the Varieties of Asthma (Edinb. Med. Journal, May 1859), promises to enter fully into the subjects of hay asthma and asthma from animal emanations.

Case. 1. *Poisoning by Rice.*—J. M., an occasional patient, cannot eat rice in any shape without extreme distress. From the description given of his symptoms, I believe spasmodic asthma to be the cause of his discomfort. On one occasion, when at a dinner party, he felt the symptoms of rice-poisoning come on, and was, as usual, obliged to retire from the table, although he had not partaken of any dish ostensibly containing rice. It appeared, on investigation, that some white soup, with which he had commenced his dinner, had been thickened with ground rice.

Case 2. *Rice-Poisoning.*—A gentleman who, as in the preceding case, could not eat rice "without being suffocated," took luncheon with a friend in chambers. The fare was simple—bread, cheese, and *bottled* beer. On the usual symptoms of rice-poisoning seizing him, he informed his friend of his peculiarity of constitution. The symptoms were explained by the circumstance of a few grains of rice having been put into each bottle of beer, for the purpose of exciting a secondary fermentation.

Case 3. A gentleman, some time since under my treatment for stricture, informed me that he could not eat figs without experiencing a most unpleasant formication of the palate and fauces; and that the fine dust from split peas produced the same sensation, accom-

panied by a running at the nose. The father of this gentleman suffers from hay-fever at certain seasons.

Case 4. Mr. P., himself a gentleman of a peculiarly nervous temperament, states that his father cannot endure the sensation produced by handling a russet apple. He also communicated to me

Case 5. that of Mr. T., who cannot remain in a room in which there is a cooked hare, on account of the peculiar effect produced on his system.

Case 6. Miss ——, after eating egg, suffers from swelling of the tongue and throat, accompanied by "alarming illness."

Case 7. Miss ——. In this case, somewhat similar effects follow the taking of honey of any kind, and especially honey-comb, into the stomach; viz., swelling of the tongue, frothing of the mouth, and blueness of the fingers.

Case 8. The following is an extract from a note received by me from a lady, who says:—"I had on three mustard plaisters—one on the throat, one on the back of the neck, and another under the left shoulder. They remained on half an hour. Cotton wool was applied on their removal. About thirty hours afterwards, a painful stinging sensation commenced in the back of the neck, followed by violent twitchings of the muscles of the face, arms, and legs, which continued in regular succession through the whole night. It yielded, after about twelve hours, to hot fomentations of poppy-heads applied to the back of the neck." It cannot be ascertained that any medicine containing strychnia was taken.

Case 9. A gentleman, a member of the medical profession, with whom I am well acquainted, suffers from nettle-rash after eating veal. Veal has the reputation of being particularly indigestible. The above instance of the production of urticaria from its use is, doubtless, not an uncommon one.

Case 10. I have been informed of a lady who cannot remain in a room in which there is a cat. Although the cat may be concealed, the lady's peculiar sensations immediately declare to her the presence of the animal.

Case 11. A patient under my care, since dead of cancer, was invariably thrown into a state of nervous excitement by the exhibition of the compound infusion of orange-peel.

Case 12. A personal friend of my own suffered from erythema nodosum after eating shrimps, although these were perfectly fresh. I believe shell-fish generally is particularly liable to excite unpleasant consequences.—*Brit. Med. Journal*, *June* 11, 1859, *p.* 460.

143.—ON PURE WATER.

There is not any form of sanitary improvement in which medical practitioners and officers of health are more highly interested than the supply of mechanically and chemically pure water for household and

portable consumption. In the face of the great difficulties which encumber the purification of the Thames, the source of our water supply, we Londoners are especially interested in whatever can effectually and cheaply remove the animal poisons and putrid abominations with which the fluid in our cisterns and water-vessels mischievously abounds. Of filters, the name is legion. But a substance has lately been introduced to the notice of scientific men, as a new filtering and purifying medium, of which the qualities are affirmed to be of so remarkable a character that they deserve a careful investigation from our more eminent chemists and sanatarians. This substance is the feroso-feric carbide of iron, or magnetic carbide of iron, the properties of which have been investigated by Professors Brand and Clarke, and Mr. Thos. Spencer, and are very ably described by the latter gentleman in an interesting letter lately printed, and addressed to Mr. Charles May, F.R.S. As a mechanical filter, the carbide of iron is peculiarly effective and rapid in its action, by virtue of its high magnetic power; for it is by the magnetic attraction of the light bodies held in suspension by water that mechanical filters generally, such as sand and other similar media, effect filtration. Where the magnetic power is low, a finely-grained layer of filtering material must be employed: and the higher the magnetic power the coarser may be the grain, the larger the interstitial spaces, and therefore the more rapid the filtration. The fact stands as to the considerable power of the carbide, and this is the theory by which Mr. Spencer explains it.

The chemical purification of the water is effected yet more remarkably. The magnetic carbide possesses the singular power of attracting oxygen to its surface, and condensing it there, without entering into any chemical combination with the gas, although catalytically affecting its properties; just as a magnet will attract a loose heap of iron filings, polarize them, in arranging them in stiæ, and endow them with properties other than those which they possessed before. It will be remembered that Schlönlein first observed that the oxygen of the atmosphere in the vicinity of an electrical machine, which had been recently employed, contained an altered form of oxygen, which he called ozone—a form of oxygen which possesses all the powers of that gas in an intensified degree, and has the great quality of combining with and neutralizing every kind of noxious body of organic origin. This ozone, the great natural agent of purification, is generated in quantity on the surface of the proto-carbide, and energetically manifests its presence by the exercise of its splendid chemical powers of purification. Passed through this filtering medium, water is deprived of all colour, taste, and odour; nearly all deleterious gases which it can contain, as sulphuretted or phosphuretted hydrogen, are rendered innocuous by the forced combination with oxygen; soft water thus treated has been proved by Mr. Spencer to have no action on lead; and, finally, water so filtered has very little, if any, tendency to give birth subsequently to animal or vegetable organisms.

These properties are so valuable, so highly interesting in a chemical and physical point of view, and so serviceable to the sanatarian, that important results must arise from the further application of the powers of the magnetic carbide.—*Dublin Hospital Gazette, Aug.* 15, 1859, *p.* 255.

144.—*Antidote to Strychnine.*—Dr. Bewley, wishing to kill a mangy cur, and having read in Magendie's "Report on Strychnia," that the sixteenth of a grain will kill the largest dog, determined to make sure of this very little animal by giving it about half a grain. But either Magendie's statement was incorrect, or the drug was adulterated, for at the end of ten minutes the dog, though suffering frightfully, was not dead. Dr. Bewley resolved to put him out of his misery at once, and accordingly mixed half a drachm of prussic acid with a little milk, and put it under the dog's snout. He lapped the milk with avidity, and in less than a minute vomited, got upon his legs, ran away, and recovered.—*Med. Times and Gazette, Aug.* 6, 1859, *p.* 149.

145.—*Tests for the Purity of Chloroform.*—M. Berthe gives the following directions in the 'Moniteur des Hopitaux:' Chloroform may contain chlorine of elaidine, alcohol, various chlorides, amylic and methylic combinations, and aldehyde. By adding caustic potash to chloroform, containing chloride of elaidine, the compound is transferred into chloride of acetyle, the fœtor of which is immediately noticed. In order to ascertain the presence of all the other compounds which may be mixed with the chloroform, especially alcoholic compounds, pound a small quantity of bichromate of potash in a little chloroform, and add to this mixture a few drops of sulphuric acid. If the chloroform is pure, a reddish-brown precipitate of chromic acid is formed; if not pure, the acid is reduced, whilst the precipitate, or sometimes the liquid itself, assumes a green colour, dependent on the presence of the sesquioxide of chrome.—*Lancet, Aug.* 27, 1859, *p.* 218.

146.—*The Male Fern in Snake-Bites.*—We learn from the 'Journal of the Society of Arts' that a public trial has been made in Melbourne of the value of an antidote for snake-bites said to be known to a Mr. Underwood. The experiments were made in the rooms of Messrs. Easy and Co., auctioneers, Collins-street, in the presence of about five hundred spectators. The snakes employed by Mr. Underwood were a whip-snake, about fifteen inches long, and two diamond snakes, one about twenty inches, the other three feet six inches, in length. The larger of the diamond snakes Mr. Underwood provoked till it bit him on the lower part of the forefinger. A rabbit was

bitten several times by the whip-snake; but neither the rabbit nor Mr. Underwood appeared to be in any way inconvenienced by the bites. The experiments were declared, however, not to have been satisfactory, and the secret of the antidote was not revealed.

In the same journal is inserted the following extract from the 'Hobart Town Mercury:'

"According to the 'Cornwall Chronicle,' 'the secret so long confined to the heart of Underwood,' in reference to his antidote to the bite of snakes, has at length been discovered, and the common male fern—*polypodium filix mas*—is stated to furnish the remedy. This very common plant has been long known as a specific in the cure of worms, especially the tape-worm—the powdered root being generally used for this purpose; but from circumstances which have transpired it would appear that Underwood uses a decoction, or broth, of the leaves near the root, as being stronger, perhaps, than those near the apex of the plant. Its power might probably be augmented if used in the form of a tincture; that is, with an ounce of the leaves steeped for a fortnight in a pint of rum or brandy; in which state it could be kept for any length of time, if well corked, without deterioration by fermentation or otherwise."—*Lancet, Aug.* 27, 1859, *p.* 223.

147.—*Arsenical Poisoning: Good Effects of the Carbonate of Iron (Sesquioxide.)*—L'Union Médicale of the 26th ult. gives an extract from the Italian journal, Il Filiatro Sebezio, in which paper M. Trapani has published a case of poisoning with arsenic. After emetics had been freely used upon the four patients affected, who all presented the usual symptoms of arsenical poisoning, the indication was to give the hydrated peroxyde of iron, the efficacy of which in such cases is universally acknowledged. But it is not always easy to procure it, hence it becomes important to ascertain whether other martial salts will act, to a certain extent, in the same manner. The carbonate of iron (or rather the sesquioxyde, as the carbonate, when kept any time, soon passes into this state) was here given, and with the best results.—*Lancet, Aug.* 20, 1859, *p.* 189.

148.—ON THE HYPODERMIC TREATMENT OF DISEASE.

By CHARLES HUNTER, Esq., late House-Surgeon to St. George's Hospital.

[In a previous paper the writer detailed some interesting cases, (see *Retrospect*, vol. xxxix, p. 50.) of which, at the commencement of the present one, he gives a slight summary.]

The cases detailed were fifteen in number, including the two in which I first tried the local injection of Dr. Wood. A brief review of the cases is the more satisfactory for these reasons—1stly, because in

all of them the same narcotic, the acetate of morphia, was used; 2ndly, because they had all been under other treatment previously without avail, and in most of the cases it was the same preparation, administered either by the stomach, or skin, which had previously failed.

All the cases were affections of the *nervous system*; nine of the brain, two of the brain and spinal cord, and four of particular nerves.

Although a narcotic, and the same narcotic, was used in every case, it was not always with the same object; thus, in some it was to procure sleep, in others, to ease pain or allay spasm, and in others, again, to attempt to palliate or cure some neuralgic affection.

Three of the cases were *neuralgia*, which had all failed to receive benefit under other treatment, although in each case it had been very varied. The two first received great benefit, firstly, from Dr. Wood's plan, and subsequently from my own, as stated in the Medical Times and Gazette, October 30, 1858; but the ultimate result of the treatment in these two cases has not yet been given.

Case 1.—The man with constant tic-douloureux of four years' duration went out cured, the injection of the morphia being at one time used three times a-day, so as to keep up a full and continued influence to prevent, as long as possible, a recurrence of the attack; it was then gradually left off, and the man went out free from neuralgia about a week after the cessation of treatment. The injection was always made in one or the other arm, the site being varied each time; no local inflammation ever occurred, nor was there ever any sickness.

Case 2.—The girl with neuralgia and disease of the eye went on with the treatment till the pain gradually diminished; she then left the hospital. The treatment in this case, owing to its nature, could only be palliative. The disease has now attacked the brain (having destroyed the eye), and she is now (June) being treated by this plan of treatment in another of the London hospitals, as nothing else seems to ease the pain or give her sleep. No sickness ever followed the injection of narcotics, but frequently did their administration by the stomach.

The third case of neuralgia was cured by a single injection, although the case had resisted many other forms of treatment. Sickness took place in this case, and was considerable.

The cases of delirium tremens were two. Morphia in the first, and opium in the second, had been given in large and repeated doses, with no decided effect. In both, the first injection caused sound sleep of many hours' duration; and both went out cured in a few days. There was no sickness in either case.

The cases of *mania* were two. They both showed that sleep could rapidly be obtained by the injection of morphia, which effect had not

been obtained by doses as large, and larger, given by the stomach. There was no sickness in either case.

In the first case of *puerperal mania* the injection was used only once; sleep followed in eight minutes. The patient subsequently recovered by the internal administration of large doses of Battley's sedative. In the other case, several injections were employed, sound sleep following each time. There was no sickness in either case.

In both the cases of *wakefulness*, sleep was rapidly induced; and in one patient excitement, almost amounting to delirium, was quelled by a single injection.

In the case of chorea the effect of the injection was always very rapid, sleep resulting in about four minutes if the quantity injected was large, and if small, the violence of the movements was diminished or arrested. No sickness was ever produced.

In the case of tetanus sleep resulted at once, although the spasms remained unaffected. In a second case of tetanus in which this treatment has been used, two hours' sound sleep followed the injection, and afterwards the patient dozed for several hours; laudanum had been previously given every hour without effect. The spasms were never violent in this case, and were observed to cease during sleep.

Both cases of sciatica went out free from all pain, the one that was cured was a little sick after the first injection; in the other case the pain returned in a milder form.

Such was the result of the treatment in the cases already given, the result was different in the various cases, even as the object was different with which the injection was employed. Sleep was the result in most cases, but not in all; spasm was quieted in some, and pain was relieved or cured in others by a single or by more injections.

With regard to the sleep occasioned by the injection, it must not be looked on as a necessary effect of the treatment, it may follow at once, after a time, or not at all, according to circumstances. Thus it may follow—*At once*. if the quantity injected is large, and the object is less to ease pain than to procure sleep. *After a time*, if the quantity is large (say one grain of morphia), and much pain exists; in which case the pain is generally quieted directly, and sleep follows in from fifteen to thirty minutes. *Not at all*, when the quantity injected is small, and there is much pain, spasm, or cerebral excitement going on, in which cases, as the quantity is small, the whole effect of the narcotic is expended either in subduing the pain and spasm, or allaying the excitement.

The Occasional Sickness.—In the fifteen cases, sickness occurred *in only two*, in one it was distressing, in the other but very slight.

In *another series of fifteen* cases, of which I have notes, sickness occurred in *four*, in one it was considerable, and in the others to no extent.

Consequently in *thirty* cases only *two* patients, both of them women

of very nervous temperament, and both suffering from tic-douloureux, had considerable sickness; in the other *four*, all men, with sciatica, the sickness was trifling; in fact, the patients themselves thought nothing of it, nor did they think it due to the injection. This cannot be called a large proportion when it is recollected how often morphia causes sickness when given by the stomach; I have constantly seen it in quarter of a grain, and laudanum in equivalent doses, cause sickness, so administered.

The *time* when the sickness comes on varies; in the two cases in which it was severe, giddiness and nausea were felt almost immediately, then faintness, till in about five minutes sickness took place; in both it continued on and off for several hours, with intervals of sleep. In the four other patients the sickness did not come on for many hours, in fact, only as a kind of ultimate effect of the morphia after a good sleep.

Cause of the Sickness.—From the preceding remarks it appears that sickness may be looked on as either a first, or as a last, effect of the narcotic. That when a *last* effect, it is but trifling, coming on after many hours' sleep, preceded for a little while by nausea, and disappearing generally after the patient has been once or twice sick, with scarcely a straining effort. A slight excess of the narcotic may be looked on as the cause of this sickness. But in both the cases in which the sickness was urgent, the patients, both women, besides being, as above stated, highly nervous, were both badly affected by narcotics, however administered; in both, the quantity injected was *less* than was employed in the cases *where slight sickness* ensued, and in many cases where none at all took place,—in the one less than a third of a grain, and in the other a little more than half, was the quantity injected. The *cause* of the sickness in these two cases, as it was so immediate, seems to have been due rather to a peculiarity in the constitution of the patients, than to the amount of the narcotic employed.

Ought the occasional occurrence of severe sickness to cause the injection of remedies to fall into disuse? I think certainly no more than it ought the introduction of narcotics in *other ways*, because sickness occasionally follows *their* administration. But as medicines, hypodermically introduced, act with greater rapidity and effect than when administered by other methods, it behoves us to be the more careful in the selection of *proper cases*; and where it is desirable to employ the treatment in such cases as the two where sickness occurred *directly*, to inject a *much smaller quantity than usual*; for it is not improbable that in those two cases, as benefit resulted in both, that a still smaller quantity would have sufficed.

The Choice of Cases.—This plan of treatment is no specific; because it acts marvellously in some cases of neuralgia, or of pain, is no reason why it should cure all. For this reason, *a due discrimination of cases ought to be made.* The same caution is given by Dr.

Wood in his paper on the treatment of neuralgia by *local* narcotic injections:—"Another caution I would offer is, that you choose the proper patient for the use of the remedy."* When to employ the injection, and when not, must depend in the general way on the particular circumstances of each individual case, such as the nature of the disease, its urgency, the object in view, &c.

There are some cases in which I think the hypodermic injection may almost be employed *as a rule*, and be put in force *before time is lost* by the adoption of other measures. I mean those cases of high cerebral excitement, of delirium tremens, and of mania, in which the speedy administration of a narcotic is indicated. In this class of cases more than any other the value of the injection is seen, I have already detailed *seven* cases of this nature, and could give many more, but there hardly seems the necessity. In these cases, to procure sleep and allay excitement is the object, and that as soon as possible; the stomach is often irritable, or in such a state that it will not absorb medicines; the patients often refuse to swallow; everything, in fact, points to the necessity of some more sure, speedy, and active mode of treatment than the more ordinary one of stomachic administration.

There are cases of sudden, violent, acute pain, in which the injection might also be tried as a *primary measure*; for instance, during the passage of a renal calculus, in such a case the pain is at times almost insupportable, and as the stomach gets quickly irritable, sickness often taking place, another reason is furnished for the trial of this plan.

Then there are cases in which the injection ought not to be tried at first, but after such general treatment as is clearly indicated has been first tried—such as purging, or the internal administration of alteratives or tonics. Tic-douloureux, sciatica, and many other neuralgic affections are of this class. In all such cases, due discrimination being made, it is astonishing what benefit follows the injection in most cases, and how quickly in many, a cure is effected by it when other treatment has altogether failed. It is often, too, in those cases the origin of which is most obscure, that the injection seems to answer best.

Rheumatism is a disease in which occasionally the use of the injection into the cellular tissue will be found highly serviceable. Two cases have been treated by it at St. George's Hospital:

1. (*Case* 16.) Under Dr. Page, a man almost crippled by rheumatism, had the pain greatly mitigated by the injection.

* My object in alluding to this passage (British Medical Journal, August, 1858,) is this,—that as I do not find localisation to the painful part necessary, my plan is available in many *diseases* in which that of Dr. Wood is not—as mania, delirium tremens, &c. It is also applicable in some cases of pain and of neuralgia in which Dr. Wood's cannot be—viz., those in which the nerve cannot be reached for injection. There is, therefore, a greater need of caution to discriminate proper cases where the range is *wider*, than where it is more limited.

2. (*Case* 17.) Under Dr. Pitman, a man that could not move his arm after acute rheumatism on account of pain in the shoulder. The pain was removed by a single injection.

3. (*Case* 18.) A gentleman under my own care, who suffered acute pain in the shoulder and arm which prevented his moving the limb and sleeping at night. It was removed after two or three injections.

There are many diseases in which the pain accompanying them must be looked on, not as the essence, but as a *very important* item, which keeps up the disease and which prevents treatment doing any good, but which, once subdued, then the inflammation or whatever the case is, rapidly becomes affected by the treatment which it had up till then resisted. In such diseases the injection may do much, and that speedily, and certainly deserves a trial.

Case 10.—The following is a case where the patient, having a peculiar destructive inflammation of both eyes suffered almost uncontrollable pain, which was unexpectedly cured by the hypodermic injection :—

T. B., aged 41, was admitted April 12, 1859, into St. George's Hospital, under the care of Mr. Tatum. For the first three weeks he suffered acutely, the conjunctiva of both eyes was greatly chemosed, red, and tender; for the greater part of this time he *seldom closed his eyes day or night.* Notwithstanding leeches, blisters, calomel, and opium, and finally morphia, a quarter of a grain every three hours, were employed. The injection of half-a-grain of morphia into the arm was then tried—it eased him for some hours, but did not cause sleep. Two days after the injection was again employed, one grain being used this time, the patient describes the effect of the injection "as something which instantaneously ran through his frame, round his head, and which seemed to go out of the back of it." The *pain was gone*, and he slept in about ten minutes. The sleep lasted six or seven hours. The patient went out about three weeks after the second injection, during which time he had no more pain, and slept well every night.

Thus there are cases where this treatment may be employed, and, as shown above, with the greatest advantage—1. As a primary measure, at the onset of the disease, without delay. 2. As a secondary measure, general treatment being first used; and, 3. As an ultimate measure, to attempt to palliate or cure, where other treatment has failed.

The Choice of a Narcotic.—This must depend entirely on circumstances, such as the sex, the peculiarities of the patient, the disease, and the object in view. It is not my intention here to go into these points as they require *almost* equal consideration before the administration of a narcotic by any method, but rather to indicate in this place the *most eligible preparations for injection.*

Tinctures may, and can be, used with good effect. Thus Mr. Burns used equal parts of the tinctures of opium and hyosciamus. I have

employed both these tinctures separately and have found this objection to them, that they cause a little hard lump beneath the skin which *may* last a considerable time, and gradually disappears if left quiet, and alone. There is not this objection if the tincture be evaporated to one-half or one-third, and be used while it is fresh.

Dr. Wood has used a solution of morphia in sherry wine as "it would not irritate and smart so much as alcohol." He also says that "nepenthe" produces less sickness than opium, and is therefore preferable as an injection. Professor Simpson has used a *solution* of the bimeconate of morphia in coccodynia.

For my own part, I *prefer solutions to tinctures;* they are rapidly absorbed, they produce no irritation if properly made, and they have the advantage, viz., of exactness, so that no mistake need be made about the strength of the preparations, or the quantity injected.

A solution of the acetate of morphia is the preparation I have used more than any other, prepared with acetic acid, but so freed from excess of that agent that it causes not the least irritation. Mr. Williams, of Liverpool, who has tried the narcotic injection in delirium tremens, has proposed to me the employment of the sulphate of morphia on account of its ready solubility.

A solution of the sulphate of atropine is a good preparation for injection and not liable to irritate. I have several times employed it, and produced sound *sleep* with doses varying from the one twenty-sixth to the one-tenth of a grain. The injection of this salt has been employed with a different object by Mr. Benjamin Bell, viz., to counteract the effects of opium poisoning as first suggested by Dr. Thomas Anderson.

Is Chloroform applicable for Hypodermic Injection? Chloroform is a narcotic which may be, with safety, injected into the cellular tissue in *urgent* cases: it rapidly produces cessation of spasm, and causes sleep.

[But chloroform thus employed produces local effects in some cases which renders its employment thus unadvisable, except as stated in *urgent* cases. The author then comes to the following practical conclusions, as to the value of medicines injected beneath the skin.]

1. That certain medicines may be introduced into the cellular tissue beneath the skin with safety and with advantage.
2. That medicines so introduced have a *general* as well as a local effect.
3. That the general effect of medicine so introduced is exceedingly rapid.
4. That this mode of administration is *more certain in its action* than stomachic doses are, for the *exact* amount introduced is known, and the whole of it takes effect, which *may* or *may not* be the case with stomachic doses.
5. Medicines are *more purely received* into the system by this

method than when given by the stomach, in which organ they may become contaminated or decomposed.

6. A given amount of a medicine employed hypodermically has a greater effect than the *same* amount administered by the stomach; *it also acts more quickly.*

7. A given amount of a medicine employed hypodermically has a greater and more rapid effect than when employed *endermically.*

8. That the medicines for which this mode of introduction is especially applicable are the various *narcotics* and *sedatives.*

9. That the *diseases* for which this plan of treatment is especially indicated are for the most part *affections of the nervous system :—*

1stly. Where the immediate and decided effect of a narcotic is required.

2ndly. Where narcotics administered by the usual methods fail to do good, and yet are indicated.

3rdly. Where the effect of a narcotic is required, and the patient *refuses to swallow.*

4thly. Where from irritability of the stomach or other causes (such as idiosyncrasy, &c.) the patient cannot take the medicine by the stomach.

10. That to produce a general effect it does not signify whether the remedy be injected into the cellular tissue of the body or of an extremity.

11. That to relieve or cure a local neuralgic affection there is no necessity to localise the injection.

12. That whether the object be to treat a local or general affection, it seems advisable each time to change the site for injection, should it be more than once required.—*Med. Times and Gazette, Sept.* 10, 1859, *p.* 253.

149.—*Medicated Subcutaneous Injections.*—Dr. Alex. Wood's method of injecting narcotic solutions into the cellular tissue is finding favour in France. M. Béhier, an hospital physician of Paris, has made numerous experiments respecting this mode of relieving pain, and has communicated the results to the Academy of Medicine.

The fluid injected in these experiments was a solution of sulphate of atropine, six grains to an ounce of water, which gives a proportion of the fiftieth part of a grain to every five drops of the solution. Fifty-three patients, affected with various kinds of neuralgia, were injected close to the seat of pain with this solution; twenty-two others with a solution of sulphate of strychnine, in the same proportions as had been observed for the sulphate of atropine. A solution of muriate of morphia was also injected in a case of slight lead colic. Pain was always relieved, and cures were effected in all the cases where the injections were sufficiently repeated—namely, in thirty-one cases out of the fifty-three. Signs of belladonna poisoning occurred in all, which was combated by opium.

M. Béhier had tried to remove pain by injections into the cellular tissue at a distance from the seat of the uneasiness, so as to put the assertions of Mr. C. Hunter to the test; but always unsuccessfully. The same physician thinks that injections of medicated fluids into the cellular tissue afford very great advantages in cases of neuralgia and paralysis; and that these injections will yield the best results in other affections, where it is important that the medicinal substances should act upon the organism at large.—*Lancet, Aug.* 20, 1859, *p.* 189.

150.—*A New Diuretic.* By ISAAC BYERLEY, F.L.S., Seacombe, Cheshire.—Gentlemen living near the coast, where there are sand-hills, will have ample opportunities of testing its efficacy, as it grows abundantly in such localities. It is the "Erodium Cicutarium," the "Stork's-bill."

A neighbouring medical friend, Dr. Parr, who had seen the plant tried, in one instance by an amateur, and in the other under his own superintendence, brought me a specimen that I might name it. He described its diuretic powers as somewhat marvellous, and stated that in each case the curative effects were speedy and permanent; although the varied means usually resorted to in such cases had been steadily but unsuccessfully employed for a length of time previously. A case of my own, in which there is ascites with hepatic disease, is improving under its use, the quantity of urine having increased considerably, with much diminution in the amount of effused fluid. The mode of preparation is to infuse an ounce of the dried plant (every part of it) in three pints of water, stewing it in an oven until two pints remain. The dose for an adult is four or five fluid ounces three times a-day; probably more may be needed in some cases.

It would be satisfactory to know the results which may arise from a further application of the remedy in other hands.—*Med. Times and Gazette, Sept.* 10, 1859, *p.* 268.

151.—*External Use of Mucuna Pruriens as an Excitant.* By J. RHODES, Esq., Glossop.—Having often been disappointed in rousing patients when comatose, in apoplexy, &c., by ordinary external stimuli, I have on a few occasions applied the mucuna pruriens on the chest, arms, and legs, in cases where hope of returning consciousness existed. In one or two minutes after its application, the legs and arms have begun to start, and the patient has violently attempted to rub his chest, &c., with his hands; and in a few minutes consciousness has returned. It might be useful in comatose states from chloroform or narcotics in general, and in drowning. I sprinkle it upon the part myself, gently rub it in, and repeat it when necessary. When it has acted sufficiently after the patient is roused, a little olive oil is applied if its action is too severe.—*Brit. Med. Journal, July* 23, 1859, *p.* 594.

152.—ON THE EMPLOYMENT OF COMPRESSED SPONGE.

By Dr. BATCHELDER.

The compression of the sponge is best executed by means of a copying machine, or in default of this, by laying it between pieces of board upon which heavy weights are laid. If desired to be at hand at all times it must have been kept for weeks or months under the compressing power. When wanted to be used as a tent, the compression should be effected by winding some thread or thin cord around a piece of clean, well-moistened sponge, removing the thread after the sponge has become thoroughly dried. Or, the sponge may be soaked in a solution of gum arabic before winding, and the tent afterwards smoothened into a proper shape by means of a knife. The winding is facilitated by transfixing the sponge by an awl which is afterwards removed. The tent should always be prepared with mucilage, and not with water, when intended to be used for dilating the canal of the cervix uteri, or any other part where moisture might induce premature expansion, i.e. before it can be properly inserted; also when it is desirable to avoid rapid dilatation, which sometimes causes considerable pain and uneasiness. When the tent can be introduced with facility, the mucilage may be dispensed with; and when it is to be introduced into any internal part it should be transfixed by a needle and thread for its withdrawal.

The production of firm, equally-diffused, and softened pressure by the application of plates of compressed sponge, and then saturating these with water, was first tried in *inflammation of the breast.* In the tent form it has been used to dilate the cervix uteri in *sterility, difficult menstruation*, and other affections of this part. The tent should be introduced by means of a pair of long-bladed forceps, or by fixing it at the end of a small, round, slightly-curved stilet, about twelve inches long, reduced to a point, with a shoulder about five-eighths of an inch from its extremity. The portion between the point and the shoulder should be small enough to be received into the base of the tent, and long enough to keep it steady when being introduced, while the shoulder enables the operator to push it safely home. When, on account of the smallness of the canal, the tent can only be introduced with difficulty, the cervix should be dilated by means of fine metallic dilators, successively increased in size. They should be about an inch and a quarter long, and have a thread attached to them, which being attached to the patient's clothes prevents their being dropped or lost. In some cases a few days, and in others weeks, may be required for such dilatation. The tent should not be allowed to remain longer than twenty or twenty-four hours, and when it is removed the vagina should be well syringed out. When it is desired to induce premature labour, the tent must be continuously applied, or be replaced by a larger, after it has become expanded. In cases of pregnancy attended with hemorrhage, we sometimes find the *os* partly open, but inflamed,

or indurated and unyielding—not dilating so as to allow the embryo and placenta to pass in cases of abortion. There may be, indeed, slight parturient pains, but not sufficiently strong. A sponge tent which is sufficiently large to fill the canal should be inserted. This will not only constitute the best tampon, but cause efficient uterine pain, and, at all events, dilate the canal sufficiently to admit of the introduction of instruments to complete the delivery.

Dilatation of Sinuses.—These may be dilated to any desirable extent by the tent, and most of them will heal when a free discharge is thus promoted. From day to day the tent should be lengthened as well as enlarged.

Fistula in Ano.—Many of these cases can be cured by the tent without operation. When an abscess forms near the rectum, it may be separated from this by a mere septum, which remains unruptured as long as a free external discharge is secured. If soon after the bursting of an abscess the tent be fairly and fully inserted, it will not only absorb the matter and prevent its burrowing or pressing upon the septum, but secure it a ready exit by keeping the external orifice open. An opening in the gut is prevented, and the sore heals from the bottom. Every surgeon knows that a communication between the abscess and the intestine does exist sometimes prior to the external opening: but in the majority of instances the external opening first takes place.

Diseased Bone.—The use of the tent is especially appropriate when a fistulous passage leads to diseased bone. "In the course of a fortnight, I have in such cases dilated the sinus, so as to be able to place my thumb and three or four fingers directly upon the diseased bone and remove the sequestrum, if one existed, or if there were caries to remove the diseased portion of bone by repeated application of the sponge. Now caries is an ulceration of bone, which in some respect resembles cancer of the soft parts. In this disease, the relative proportions between earthy and animal matter entering into the composition of the bone seem to be disturbed. In some cases the animal matter, or vascular portion, exceeds the earthy, and then we may have decaying bone with fungous, bleeding masses. In others, the earthy matter may predominate and produce irritation or cause exfoliation. Nature's method of cure, particularly in the last case, is to get rid of the earthy matter, either by solution or absorption, or by wholly depriving it of its vitality, when we have exfoliation or necrosis. The reason why caries is so tedious and difficult of cure, is that the earthy matter, partially or wholly deprived of its vitality, keeps up a constant irritation, which prevents a portion in the immediate vicinity from being duly nourished. Nature, as suggested, causes the death of the diseased portions, and then throws them off. The surgeon, for the same purpose, applies the external cautery or the gouge and chisel; but the action of the sponge is less dangerous, painful, or repulsive, and more certain." Its action upon diseased bone was discovered by

the author accidentally, and he has since found most cases of caries yield to its application. Applications of plates of compressed sponge have also been very successfully resorted to in cases of enlargement of the bones, especially in syphilitic nodes.

Stricture of the Rectum.—For dilatation of *stricture* of the *rectum* the sponge tent may be used with great effect. It may usually be prepared without mucilage, except when there is much irritability, when it dilates too rapidly. In some of these cases its toleration has to be secured by introducing, an hour or two previously, a suppository formed of watery ext. of opium. gr. ii., ext. hyoscy. gr. i., ext. belladon. gr. ½.

Hemorrhoids.—The sponge tent introduced just within the sphincter may be successfully resorted to for the compression of hemorrhoidal tumours. and also for the suppression of hemorrhage from the rectum. It should be transfixed with a thread.

Stricture of the Urethra.—A full-sized metallic instrument should be first carried down to the stricture, and pressed firmly against it for a longer or shorter time, according to the degree of uneasiness it produces, when it should be withdrawn, and a tube, open at both ends, containing the tent and a piston, introduced and pressed against the stricture. When the tent has been forced out of the tube. the piston may be withdrawn, and a few drops of water passed down the tube to the tent, which is kept steadily in or against the stricture. In a short time the tube also may be withdrawn. and the tent having expanded so as to retain its place, may be allowed to remain as long as may be deemed necessary. To prevent all accidents, the sponge is transfixed by a thread, to the other end of which is affixed a button. There need be no hurry in withdrawing the tent, the attempts at its expulsion during micturition helping to dilate the stricture. If the stricture is very irritable, a few drops of saturated solution of ext. belladon. and watery ext. opii. may be passed down to the stricture half an hour before the introduction of the tent, the patient passing water shortly before the introduction of the tent or the solution.

Dilatation of the Female Urethra.—The tent is admirably adapted for this purpose, and when incontinence follows its use, this seldom lasts beyond a week or ten days.

Malignant Growths.—Dr. Batchelder has found the sponge successful in some cases of cancer, and thus explains its operation: "The pressure occasioned by the expansion of the compressed sponge disturbs the cancer cells, and forces them out of their place, affects their consistency, and causes them to be dissolved; and the tumour, thus freed from its malignant ingredients, may be more readily removed by absorption, or if not absolutely removed, it may be so divested of its malignity as to remain harmless for years. . . . This remedy may, and undoubtedly will, fail when either the constitution or the surrounding parts are to any considerable degree affected. The cancerous diathesis, even when somewhat apparent, does not, however, seem

to preclude its use, as can be seen by the following case. . . When it can be borne, whether compressed or not, I am satisfied that the sponge is an excellent application to cancerous and certain other ulcers of a vitiated character. The secretions of such ulcers seriously affect the health, and often break down the constitution, and ultimately destroy life, all of which deleterious consequences the sponge, by absorbing the secreted fluid, tends to prevent. In the removal of the elevated, indurated edges of the callous ulcer it is exceedingly useful. The sponge should be large enough to overlap the edges of the ulcer by at least half an inch.

Swelled Testis.—The testis should be turned up on the abdomen and the sponge and spica bandage, properly modified, applied. For a day or two uncompressed sponge may be used ; and when the patient has become used to this compressed sponge may be bound on, the patient being kept in bed, and the bandage readjusted whenever it slips off. The removal of the swelling, as also of the tumefaction of the glands of the groin is much promoted by the occasional administration of an emetic.

Vegetations of the Glans Penis or Prepuce may be speedily removed by turning the organ up over the pubes, and applying the sponge and a bandage, a flexible catheter being kept in the urethra. The growths are often destroyed with great rapidity, the greatest inconvenience being the confinement to bed.

Non-malignant Tumours.—Enlarged lymphatic glands may by this means be speedily removed ; and it is almost a certain means of preventing the suppuration of bubo. In some cases of enlarged inguinal glands, a hernial truss, with a stiff spring and a glass pad, has also been used, the pressure being graduated by interposing pads of cloth between the spring and the body on one side or other of the tumour.

Enlarged Joints.—Whether the enlargement has arisen from effusion into the joint from synovitis, or from infiltration of the cellular tissue surrounding it, no remedy has succeeded like the sponge, especially under the latter circumstances.

As a Styptic.—This the author illustrates by its efficacy in wounds of the palmar and plantar arteries. " The phenomena attending these wounds are often somewhat peculiar. The blood, forced extensively into the surrounding cellular substance—perhaps under the aponeurosis—seems to come welling out from a considerable surface, which renders it very difficult to find the wounded vessel. If the surface be scraped again and again with the handle of a scalpel, the extent from which the blood issues will be lessened down to a small space. Upon this let a piece of compressed sponge, shaved to a point, be applied, and perhaps another broader piece, followed by a compress and bandage, the wounded part being then brought to an acute angle with the limb above, to which it may be bandaged or confined as closely as consistent with comfort. The uneasiness occasioned by this

procedure may be relieved by extending the limb a very little from time to time, just to give temporary relief. Although it is undoubtedly a fact that the position of the limb alone will in most cases control the hemorrhage, in order to be sure I employ the sponge also. With the influence of this arrangement of parts upon the arterial circulation of the hand and wrist I became accidentally acquainted many years ago, by failing to feel the pulse when the arm was much flexed at the elbow. On further examination, the same result, though less decisive, was found to follow the flexure of the leg on the thigh, and still more that of the latter upon the trunk. In some, these positions will render the pulse at the wrist, and also the beat of the anterior and posterior tibials, very weak. or quite imperceptible at the points where their pulsations are most readily felt—a fact of too much importance not to be made available in practice, especially in the treatment of wounded arteries of the hand or foot. It remains to suggest the trial of position in the treatment of popliteal aneurism. The object in such cases being the coagulation of the blood in the tumour, might not this be effected by bending the thigh upon the pelvis and confining it in that position for several days. lessening its irksomeness by the administration of opium, or occasionally ether or chloroform, or by slightly altering the position of the limb ?"

Varicose Veins.—In a case recently treated by the author compressed sponge was applied over the internal saphena as it passes behind the condyle, and kept on by a vulcanised India-rubber bandage. When the sponge was wetted it effectually compressed the vein, and the relief was complete.—*New York Journal.—Med. Times and Gazette, July* 16, 1859, *p.* 66.

153.—ON THE CHRONOMETRY OF LIFE.

By Jas. Paget, Esq., F.R.S., Assistant Surgeon to St. Bartholomew's Hospital.

The design of this discourse is to illustrate the law that the processes of organic life are regulated with a regard to time, as exact as that which is observed by them in respect of size and weight and quantity of material employed in them; and to show that such an observance of time is characteristic of life, depending essentially on properties inherent in the living bodies themselves, and not on conditions external to them. Laws indicating the limitation of the organic formative processes, in respect of quantity, are evident in the facts that, in the ordinary conditions in which each living being is found, it and all its parts have appropriate size and weight and mutual proportion. These may, indeed, be modified by the variations of external conditions, or by events that are of the nature of accidents; but the range of possible variations is, in nearly all cases, comparatively narrow; and the boundaries are soon reached, in which changes

of external conditions become incompatible with life. An instance of a corresponding limitation of the organic processes in regard to time might be noted in the natural duration of each creature's life. It is, indeed, not possible to assign any exact number of hours, days, or years, as the constant limit of life in any species; but it is enough to prove a law of time, as limiting the total duration of the organic processes in each, when we see that, in man, and in other species, the length of life, when not diminished by disease or violence, is as fixed as the natural weight or stature is, and that the term of life is marked by changes whose source is inherent in the living body. Watching these changes in the senile degenerations of the human body, it is evident that life does not cease, naturally, because of any change in the external conditions of living; and that the body is not, with advancing years, gradually worn out, as if there were a gradual consumption of a store of material or of force; but that, as, at a set time, the development of the body ceases and growth goes on, and then growth ceases and the body is only maintained in its perfection, so, after a time of such maintenance, the method of the formative processes in the body changes, it slowly degenerates, and through degeneracy dies. And all these stages are alike natural, constant, timely; all, too, are together, characteristic of life; there is no such succession of events to be traced in any form of dead matter. Observance of time may, again, be noted in the formative processes concerned in any of the organs whose changes mark the divisions of a life into its chief periods; *e.g.* in the teeth. Considering merely the conditions in which the teeth of the first set are placed before they project from the gums, there appears no reason why one should be cut before the other, or why they should not all grow with equal speed. Yet while they all grow alike in regard of structure and composition, they have very different rules in regard to the time-rate of their formation. And a yet more marked instance of time-regulation is in the contrast of the teeth of the first set with those of the second. In all essential characters, except those of strength and size, the two sets are much alike; yet there is the widest difference in the rates at which they are formed, and in their duration. The second teeth require as many years for their formation as the first require months; the first live but a few years, the second should live as long as the rest of the body, and sometimes do so. Now there appears nothing to which, as to an efficient cause, this difference can be referred. Its utility and final cause can be discerned; but, as to that which verily determines the rates of growth, and the durations of the teeth, it can only be referred to a First Cause; or it may be said, as of other things subordinate to a First Cause, that it depends on some of those properties which each living being inherits from its parents, and through which it results that, in respect of time, as well as of method and quantity, the formative processes in the offspring are a repetition of those of the parent. The observation of the development and changes of the teeth

affords, moreover, an excellent instance of the punctuality with which time-work is regulated in the organic processes, and of the manner in which several different, and really independent, processes, being set to the same time-rate, are made to co-operate to the end of utility in the economy. This is evident in the coincidence of the development of the teeth of the second set, with the removal of those of the first; and in the coincident growth of the jaw, and all its muscles and other apparatus for mastication. In all of these (and the same might be said of any other system of organs in any species) the formation of every part is achieved with an admeasurement of time as precise, and as perfectly designed as that of its shape, or size, or structure. For examples of organic processes, adjusted to be complete in definite periods of time, the germination of seeds and the hatching of eggs could be cited. In plants, and in cold-blooded animals, the time varies according to temperature, yet not without evidence of a proper time-rate; but among birds, each species has its own time for incubation, as fixed as its other specific characters. In other words, the development of the structures of an egg into those of a young bird, appropriately fitted for life in the open air, is timed to a certain rate of progress; so much work is to be done in so many days, neither more nor less; and on each day its appropriate and special portion of the work. And it is evident that the time occupied in the process is determined by the inherent properties of the egg itself. For if the eggs of any number of species be exposed to the same heat and other conditions, in a hatching machine, then, as surely as the bird produced from each will be like its parents, so surely will it be hatched in the same time as its parents were; in other words, the observance of a specific time-rate in the process of development is as exact as that of any other specific character. With this observance of time in the development of the young might be noticed that which is, commonly, coincident in the parent. Not to cite the example of all the mammalia, that of pigeons might be taken, in which, during the incubation of their eggs, the crops of the parents are remarkably developed, so that they may be fitted for the secretion of a fluid destined to make the food of their young offspring more suited for their sustenance. The correspondence of these time-rates, observed at once, in the development of the young pigeons, and in that of the crops of the parents, demonstrates, in both, a provision for chronometry in their organic processes, as clearly as the faces of two clocks, constantly keeping time together, would prove that they both have some apparatus for chronometry within. Further, the provisions made by parents for their future young afford evidence of the time-regulation of organic processes, in so far as those provisions seem to indicate a reckoning of the time necessary for their completion. For example, certain turtles lay their eggs in hollows made in the sand, leave them there to be hatched and at the time of hatching return to them for the sake of their young. It might be asked, how can these creatures, and many others in similar cases,

reckon the passage of time? Most probably, they do not reckon it at all: but just as the timely attained fitness of their organisation for preparing and filling their nests impelled them to those acts, so some time-regulated organic processes, taking place in them after the laying of their eggs, bring about at length a new condition, of which a dim consciousness becomes an impulse to them to return to their nests. Such an explanation would involve little guess-work; for changed organisation is, manifestly, often the source of impulse to instinctive actions, and the parental organisation does commonly change at a rate commensurate with that of the development of the offspring. And a similar reference to chronometric processes in the body, might explain many, though probably not all, other instances in which animals seem to have a power of reckoning the passage of time. The phenomena of disease, especially in fevers, agues, the consequences of injuries, and many cutaneous eruptions, would afford abundant instances of the observance of time in the organic processes. The vaccine disease might be generally watched as an illustration, being characterised by a vesicle at each place of insertion of the virus, which vesicle begins to appear on the third day, and on the following days passes through changes which are as exactly regulated in time as they are in visible characters. The changes in this vesicle are, moreover, indicative of a coincident succession of events in, or produced by, the virus inserted, which, in the blood of the vaccinated person, increases, and, incorporating itself in the vesicle, reaches its highest development and greatest inoculating power on the eighth day, and then degenerates. The vaccine might, in most essential points, be regarded as a type of morbid poisons, *i.e.* of such as are the products of disease. Whether inserted in the blood by inoculation or bred therein, they commonly occupy definite periods of time in their development, and increase, and decline; as with a life which is chronometric in all its phases and in its total length. The instances of morbid poisons would supply examples of organic processes timed to various numbers of days; and many that are completed in a day, or in given portions of a day, are traceable in the events of sleep and waking in animals (and, perhaps, also in plants,) in the daily variations of the pulse, and of breathing, the returns of hunger and thirst, the regulated times of the digestive functions, &c. In man, indeed, consciousness and will are so concerned in some of these functions, that they may seem to lack that regularity which belongs to merely organic processes; but, if studied generally, and in other species as well as man, they all tell of such processes accomplished with regular measurement of time, and not determined by the external events or conditions of the day or night. Thus, for sleeping and waking, and the times of hunger and thirst, man's independence in regard to day and night, or light and darkness, and the habits of different species whose times of activity are severally, in the early or later day, in twilight or at night, may prove that the earth's diurnal changes are not

the causes of these diurnal peculiarities of animal life. The very cause of sleep, and of that which is yet more mysterious, waking, may be unknown; but they are evidently connected and correlated with those alternating conditions of the structures, of which men, and probably all animals that sleep and wake, are conscious in the sensations of fatigue and of refreshment. The ordinary activities of one portion of the twenty-four hours, the activities, especially, of the muscles and nervous centres and the senses, produce an amount of structural, or chemical, change which is exactly repaired in rest during sleep. In other words, the organic processes for the repair of structures changed (as all structures are) by exercise, are adjusted to such a rate, that in general, and on an average, in the time of sleep, they may completely restore the parts that are impaired in the activity of waking time. And so, of that replacement of substances in the several structures and in the blood, which is the purpose of feeding; the processes of digestion and of the several stages of assimilation are so timed, as to accord exactly with the times of daily taking. The most minute observances of time in organic processes might be noted in organs that have rhythmic motions, as in hearts and breathing muscles, ciliæ, the vacuoles of certain zoospores, as Volvox and Gonium. In the Croonian Lecture at the Royal Society, in 1857, the speaker had endeavoured to prove that these and other rhythmic movements in plants, as well as animals, are due to corresponding time-regulated nutrition. He had expressed his belief that "rhythmic motion is an issue of rhythmic nutrition, *i.e.*, of a method of nutrition, in which the acting parts are, at certain periods, raised, with time-regulated progress, to a state of instability of composition, from which they then decline, and in their decline may change their shape and move with a definite velocity, or (as nervous centres) may discharge nerve-force." And this would be still maintained; but whether it were true or not, the rhythmical nutrition of rhythmically acting muscles would be certain. If not a cause, it must be a consequence of such acting; for it is inconceivable that the heart (for example) or the diaphragm, or any other rhythmic muscle, should be free from waste or impairment in its action, or from the necessity of being renovated in its rest. Difference of mode of action could not determine a difference in the immediate effect of action. With long exercise, muscles become so changed that their changed state can be felt in the sensation of weariness, and proved by chemical analysis. But the change thus proved is only the accumulation of the changes wrought in many muscular actions, each of which has contributed a share to the whole amount, just as each revolution of a wheel contributes to the final wearing out. Similarly, every action of the heart, or of the breathing muscles, is attended with change or impairment of composition; but the impairment is repaired in the next following period of rest or relaxation. In other words, the alternating actions in shortening, and rests in lengthening, of the muscular fibres are correlative and synchronous with their

alternating impairments and repairs of composition. The chronometry of such organic processes seems perfect; nutrition is in them divided, as it were, into units; and for each unit, there might be reckoned a unit of time. Two results of this constant maintenance of rhythmic muscles are remarkable; viz., the enormous power they are capable of exerting, and their freedom from fatigue when only naturally acting. The latter result is proved to depend on the constant maintenance of the muscles, in their timely intervals of rest, by the weariness which is produced in the same muscles when they act otherwise than rythmically, as in the muscles of respiration when employed in any voluntary movements, or in coughing, or other violent respiratory acts. The instances adduced thus far might supply examples of organic processes adjusted to periods of time varying from the length of human life to less than a second. They were all examples of large classes of facts, from which might be filled up the instances of observance of other and very diverse periods of time; and in all of them, the time-rate is essentially determined, not by external conditions (though these may, in some measure, modify it) but by the inherent properties of the organic bodies themselves. In another large group of instances, those, namely, in which vital processes are completed, or attain some climax, in a year or in a set portion or season of a year, an independence of external conditions appears less evident. The higher organisms, chiefly by reason of their having in themselves the power of generating heat, may manifest their own time-laws with comparatively little disturbance from without. But in the vegetable world, and in the lower animals, the organic processes are, for the most part, suspended during part of the year, for want chiefly, of the heat which is a necessary condition of their activity, and the variations of which, for the rest of the year, very greatly affect their rate. Yet even in these, there appear sufficient indications that the times in which the processes of organic life are accomplished depend, essentially, on the specific properties of the several organisms themselves. Thus, under the same external conditions, each species observes a proper rate of its own. All the plants, for example, of a given locality are subject to the same temperature, and other seasonal conditions; but their rates of living, like those of various eggs placed in the same heat, are different; each reaches the chief events of its life at a certain period of the year. Variations of the seasons may affect all of them; but their method of succession is not thereby changed; they observe the same proportions in the times severally required for their organic processes; and this unaltering proportion indicates a time-rate specific for each, though equally variable in all. Moreover, among plants, there are numerous examples of varieties, which differ from the general character of their species only, or chiefly, in regard to the times at which their vital processes are accomplished. Such are the variations that are known as "late," and "early," among flowers or fruits; of which some may be propa-

gated by seeds. [Specimens were shown from two horse-chestnuts growing opposite to one another by the great gate of the Kew Gardens, of which one is, every year, three weeks earlier than the other, in all the processes of its life; and of varieties of Erythronium, Dens Canis, from the same gardens, the plants of which, growing side by side in the same bed, always present a similar difference in their times of flowering, &c., though in all other respects alike.] It would be difficult to imagine a variety thus marked only by a peculiarity in rate of living, if temperature, or the influence of the seasons, alone determined the rate of life in the species. The simplest explanation seemed to be that, as there may be varieties in size and number of organs, and almost all the other properties of a species, which together make up its specific character, so there may also be varieties in regard to that time-rate of the processes of organic life which, even by this variability, is indicated as essentially dependent on the properties of the organism itself. Again, there are some species in which there seems to exist a singular independence of external conditions. Instances of this are found in the Eriogastor lanestris, and the other moths mentioned by Kirby and Spence. If pupæ, formed in June or July, be "selected of the same size, and exposed to the same temperature, the greater number of them will disclose the perfect insect in the February following; some not till the February of the year ensuing and the remainder not before the same month in the third year." (Vol. iii. p. 264.) The design of so singular an arrangement is, as they observe, to secure that insects, coming into active life in February or March, may not be utterly exterminated by the ungenial weather of a single season, or of two such seasons in succession; but the very cause of the differences among the pupæ, in their relations to the same external conditions, must be in their own properties. A somewhat similar instance of apparent complete likeness among seeds in all respects except that of time, is in those of a Begonia, which, if taken from the same pod, and all planted together, and all kept in the same conditions, will germinate, some in a day, some at the end of a year, and some at various intermediate times. To these indications of self-dependent time-rates in the lower organisms, might be added all the facts of another class, which show punctuality in the adjustment of several distinct processes. Scarcely an event of life could be watched which would not show it. [The instance by which it was illustrated was that of a Saxifraga, whose stamens, like those of Parnassia, arrive at their very maturity, not all together, but in pairs, and in pairs bend upon the pistil, each pair rising again before another pair bends down.] And, lastly, the influence of temperature on the rate of the formative processes in the lower organisms is scarcely, or not always, greater than that of nutriment and other external conditions, is on their quantity. The occurrence of "good" and "bad" seasons indicates the latter influence, as that of "early" and "late" seasons does the former. Plants of the same species growing, some in an arid, others in a rich soil,

differ exceedingly in size; the one are stunted, the others exuberant; here nutriment modifies the quantity of formation, as, in other instances, varieties of heat will modify its rate. But this being so, it may be held that as a certain average size or quantity of growth is a characteristic of each species, and an issue of its very nature, so is a certain average time or rate of growth. Quantity and rate may alike be varied by external circumstances, but the standard or medium of both, as well as the limits of variation compatible with life, are determined by the natural and inherent properties of the species. Whatever evidence these and the like facts might supply, that, in connexion with the seasons, the time-rates of the organic processes in the lower organisms are essentially dependent on the inherent properties of each organism, similar evidence might be adduced for the case of the higher, and especially the warm-blooded animals. In these the varieties of seasons have less influence in modifying the rate, as well as all the other measures, of life; and the less influence, the higher the species, or the degree of development of the individual. Moreover, there are in birds some instances in which organic processes have a tendency to observe certain times of the year even when the seasons are changed. Thus among those brought from Australia to this country, some of the parakeets breed here in December; the black swan sometimes breeds in November as well as in May; the New Holland Cereopsis-goose has bred at the Zoological Gardens every February for five or six years. Among migratory birds, also, it has been observed that when they are kept in confinement, and removed from all the circumstances that might be supposed to induce or necessitate their journeys, they yet become restless at the return of the season for their migration. In these and the like facts there appear indications of a chronometry in the organic processes of warm-blooded animals, which corresponds with that of the seasons, but is essentially independent. And, if it be so, these might form a group offacts, in addition to those of the diurnal variations of the organic processes, in which vital changes are set to the same rules of time as changes of the surface of the earth, yet have their own proper laws; and concerning which it might be said, that the cycles of life, and of the earth, do, indeed, correspond, but only as concentric circles do, which are drawn round one centre, but are not connected, except in design and mutual fitness. But, however this might be, all the instances of time-regulation cited in the discourse (all being examples of large groups of facts,) would seem sufficient to prove that the observance of time in organic processes is as exact and as universal as that of any other measure: that each species has a certain time-rate for the processes of its life, variable, but not determined, by external conditions; and that the several phenomena commonly studied as the periodicities of organic life, are only prominent instances of the law which it was the object of the discourse to illustrate.—*Med. Times and Gazette, June* 11, 1859, *p.* 593.

154.–OBSERVATIONS ON THE MEDICAL ADMINISTRATION OF OZONIZED OILS.

By Dr. THEOPHILUS THOMPSON, F.R.S., Physician to the Hospital for Consumption, &c.

[In this paper (which was read before the Royal Medico-Chirurgical Society) the author, after some general remarks on the properties of ozone, describes the results obtainedf rom its administration in association with oils:]

The oils being ozonized by exposure for a considerable time to the direct rays of the sun, after previous saturation with oxygen gas, according to the process adopted by Mr. Dugald Campbell. The cases of fourteen consumptive patients to whom the ozonised oils were given are detailed; and the principal facts noted are also appended in a tabular form. The conclusion to which these experiments point is that the administration of ozonized oils has a remarkable tendency to reduce the frequency of the pulse. Of the fourteen patients whose cases are detailed in this communication, there are only two in whom no such effect was observed; and although in a few instances the effect may have seemed insignificant or transient, in the larger proportion it was very considerable, and must be attributed to the ozone rather than to the oil, since it was repeatedly manifested in patients who had taken cod-liver and other oils without any reduction, or even with an acceleration, of the pulse; and further, the effect on the pulse was nearly as distinct when the ozone was associated with the oil of the cocoa-nut, or of the sunflower, as with that of the cod liver. This circumstance is the more significant, since the administration of sunflower oil without ozone has not appeared to the author to manifest any important remedial power. The reduction of pulse was usually observed in two or three days, and often continued progressive. A reduction of twenty beats was observed in certain cases to occur respectively in two, three, four, and six days; in other instances a reduction was noted of twenty-four pulsations in fourteen days, thirty-four in thirteen, thirty-six in twenty-two, forty in eleven. In one patient the pulse fell as low as 60—probably considerably below the natural standard; but in most of the favourable instances the reduction stopped when that standard was obtained.

The apparent effect of the remedy is one which, prior to experiment, the author would not have anticipated. No other obvious result was noticed, excepting a general improvement in the patient's condition. In some of the patients the use of simple and of ozonized oils was alternated. In one case the alternation was made three times, and the result was in each interchange of treatment so direct and remarkable as to make that particular example equivalent in force to three experiments.

In addition to the patients under his own observation, the author refers to four instances noted by Dr. Scott Alison, who obligingly

pursued the investigation during Dr. Thompson's absence from the hospital. In these four cases the disease was in the third stage. In two, a remarkable reduction in the rapidity of the pulse, amounting to about twenty beats, occurred under the use of the ozonized oil, while the improvement induced could not be referred to any other cause. Dr. Alison remarks, "I attach some value to this observation; for I prescribed the oil totally divested of all prejudice in its favour, and I have always been reluctant on imperfect grounds to refer results to the operation of medicines. If ozonized oil can reduce the rapidity of the circulation—a feature of great prominence in phthisis,—this remedy possesses a most valuable property, rendered still more valuable by its contributing at the same time to improve the general health."

The author mentions having used ozonized oil of turpentine with marked and prompt advantage in some cases of hæmoptysis, but has not sufficiently repeated the experiment to feel entitled to express an opinion as to its remedial superiority over ordinary turpentine. He adds that, should more extended observation establish for ozonized oil the property indicated by these experiments, it will prove a valuable addition to our list of remedies, especially in consumption (which is a disease peculiarly characterized by hurried action); but not, perhaps, exclusively in this disorder, since there are other morbid conditions in the treatment of which it is very important to lower the pulse without reducing constitutional strength.—*Lancet, July* 9, 1859, *p.* 35.

155.—ON THE USE OF SACCHARATED LIME IN MEDICINE.

By Dr. JOHN CLELAND, Demonstrator of Anatomy in the University of Edinburgh.

[The solubility of lime in water is much increased by the presence of sugar, a direct chemical combination taking place. Ordinary lime water being far too weak a preparation to develope to advantage the therapeutic properties of lime, advantage may be taken of the above property to procure a solution sufficiently strong to be at once valuable as a tonic and antacid.]

Sugar combines in two or more proportions with lime, and on this subject I shall quote from M. Regnault (Cours Elémentaire de Chimie, vol. iv., p. 138.) "Two combinations may be obtained of cane-sugar with lime. The first is produced by pouring a solution of sugar on an excess of slaked lime, when a combination is formed very soluble while cold, and which is separated by filtration. If the fluid be heated to ebullition, the greater part of the combination is precipitated, for it presents the remarkable property of being much less soluble when heated than in the cold. It may even be washed in boiling water, and

then redissolved in cold. This saccharate of lime, dried at 212°, has the formula $3CaO.2(C^{12}H^{11}O^{11})$. If, on the contrary, hydrated lime be added in small quantities to a concentrated solution of cane-sugar, until the last added portion refuses to dissolve, and alcohol be then poured into the liquor at 180 Fahr., a saccharate of lime is precipitated which has the formula $CaO.C^{12}H^{11}O^{11}$. The solutions of saccharate of lime have a strongly alkaline reaction; they attract carbonic acid rapidly from the air, and crystals of carbonate of lime, exactly similar to native crystals of that substance, are deposited on the walls of vessels containing them. Solutions of cane-sugar can, besides, dissolve very various quantities of lime, according to their concentration and temperature. On ebullition, they deposit strongly basic saccharates which contain from 3 to 4 equivalents of base."

For therapeutic purposes the first described compound is best suited, for it is the most soluble, and obviously it is advantageous to have as small a proportion of sugar as possible. Instead of pouring the sugar in the form of syrup upon the lime, I find it more convenient to mix the slaked lime and the sugar, and then add the water. The following is a very good formula: Slake 8 ounces of quick lime; rub up with it five ounces of white sugar; add 1 pint of water; stir for some time, till the hard stiff masses which the sugar and lime are liable to run into are as much as possible dissolved; then filter. The product should be perfectly clear, and of only a slightly yellowish tint. A solution made in this way will contain 18 grains of lime in every ounce by weight, and altogether about 106 grains of solid matter to the ounce. Taken undiluted, a few drops are sufficient to roughen the tongue. When diluted, the taste is at first an acrid one of lime; but this is immediately replaced by a sweet taste in the back of the mouth, admitted to be pleasant. Made as just recommended, the solution is not liable to decomposition unless it is exposed to the air. By employing a smaller proportion of water to lime, a still stronger solution may be obtained, but not with any practical advantage, as there is increased difficulty of filtration and greater tendency to decomposition. The strongest solutions are scarcely, if at all, affected by boiling; but if diluted, a copious precipitation takes place on application of heat. This, however, will not serve as a test of strength, as addition of sugar in sufficient quantity will make any solution, of whatever strength, remain clear on ebullition.

My first trials of the medicinal effects of saccharated lime were made in the winter 1856–7, with solutions made by myself and by Mr. Stewart, druggist, Inverleith Row. After I had quite satisfied myself of its value, in spring 1858, I give directions for making it to Messrs. Duncan, Flockart, and Co., and recommended it to the attention of various members of the medical profession in Edinburgh.

I shall not enter largely into the therapeutic effects of this preparation, but only give a cursory indication of them, basing as I do my title to speak on the subject simply on my being the first to introduce

it as a remedy. It is of course a powerful antacid, and probably the best we have, since it is stronger and pleasanter than magnesia, and does not weaken digestion like the alkalies. Far from doing so, its most important use is as a tonic of the alimentary system in cases of obstinate dyspepsia. As such, its action is much more powerful than that of the vegetable stomachic tonics. It is suitable for cases with too little as well as for those with too great secretion of gastric juice, no doubt because the former state of matters is obviously a result of atony, which the lime removes. It seems particularly serviceable in gouty constitutions. In the dyspepsia of hysterical and anemic cases it does not seem to be of great use. Care should be taken to tell the patient not to take it before breakfast, as it sometimes causes a degree of nausea in the morning, when the stomach is empty. It suits very well to take it immediately after meals; its alkalinity does not at all interfere with digestion. Practitioners seem generally to take up the prejudice beforehand, that saccharated lime must be liable to produce constipation, probably judging so from the action of chalk; but I wish particularly to insist that it has not, in the slightest degree, any tendency to occasion such an effect. On the contrary, it is a very valuable means of overcoming gradually that chronic constipation which is so frequent an accompaniment of dyspepsia; and persons who have for years been in the constant habit of using aperient medicines have been able to abandon them in great measure after taking this remedy for some time. In a single instance it acted as a purgative, so that its use could not be continued. It will be found serviceable in checking the diarrhœa of disordered digestion, acting as lime water does, only that the latter is so dilute that it is often impossible to administer it to adults in the quantity desirable. Patients who take saccharated lime habitually get to like the taste, and seem to think it exhilarating. It may be found useful also in allaying the cravings of the intemperate. I have no doubt that, if it be fairly tried, practitioners will find it an exceedingly useful remedy. It may be given in doses of from 20 or 30 to 60 minims or more, in a glass of water, two or three times a-day.

I shall venture, in conclusion, to suggest that the large and various set of remedies embraced in the general name of tonics tend somewhat to group themselves in three clusters, corresponding to the three great systems developed from the three layers of the embryo, viz., tonics acting primarily on the musculo-nervous system, such as quinine and strychnine; those acting primarily on the vascular system, such as iron and manganese; and, lastly, those acting primarily on the alimentary system, among which lime is most prominent, and, after it, such vegetable tonics as gentian, calumba, quassia, &c.—*Edinburgh Medical Journal, Aug.* 1859, *p.* 114.

156.—OF THE CHLORATE OF POTASH.

By Dr. FOUNTAIN, New York.

Dr. Fountain states that he became acquainted with the remarkable power exerted by this highly oxygenated salt in mercurial salivation in 1857, and consequently long before this had been observed by Herpin and others. In charge of the Hospital of the Panama Railroad Company at Aspinwall, he often met with ptyalism in consequence of the free use of mercury, the peculiar type of disease met with on the isthmus rendering it necessary. Finding the various local applications of little avail, and recollecting Dr. West's recommendation of the chlorate in stomatitis of children, he gave in a bad case twenty grains every three hours, besides using it also as a wash. The effect was almost magical, and subsequent experience has only confirmed its efficacy. And Dr. Adler, engaged in the same service, says: "Such has been the uniform success following the administration of this salt, that from my own experience I consider it as a specific. It has never failed." In some cases where mercury had to be given for a long time, and danger of ptyalism was feared, it has been given as a prophylactic, and, as Dr. Fountain believes, with good effect. Dr. Fountain also gives an account of the advantage he derived from the use of the chlorate, in Iowa, when, owing to a deficiency in the supply of vegetables, and poor persons living on salted meat, and the cheapest food, a mild form of land scurvy broke out—the manifestation of the disease being confined to its local effect on the gums, without the production of constitutional symptoms. Recovery rapidly took place under its use, even when the diet remained unchanged. In ulcerative stomatitis he has never known the salt to fail.

The author's chief object, however, is not to add illustrations to facts already known, but to call attention to a practical application of the chlorate not yet much noticed. It is as an *oxydising remedy*, capable of coming to the aid of the respiratory process; and of stimulating secondarily the function of absorption, that its agency acquires a vast importance. This was first exemplified to him in a case of cyanosis from heart-disease, in which the blue colour was remarkably removed during the employment of the chlorate; and two cases are also given, one in which respiration was impeded from effusion of blood into the thorax from a wound of an intercostal artery and the other an example of excessive dyspnœa from hydrothorax—in both of which the recovery seemed to be due to the use of the chlorate, which "supplied the blood with oxygen sufficient to sustain life during the time when respiration was seriously impeded." In a case of pneumonia typhoides, in which the imperfect aeration of the blood was the combined effect of an asthenic fever and a local engorgement of the lungs, the same benefit followed its administration. "The chlorate may answer another and valuable purpose in

promoting absorption. It readily parts with its oxygen by the influence of a moderate degree of heat, or a weak acid; both of which exist in the body in sufficient amount to effect the decomposition to a greater or less extent. This is the theory: and practical confirmation has been made by the cases herewith reported. If by increasing the amount of oxygen in the blood, we enhance its power of removing deposits, then do we have in the chlorate another property of extensive application and great practical utility. It would render it doubly applicable to all cases where respiration is impeded by effusion within the chest of liquids or solids requiring decomposition for absorption, such as hæmatothorax, empyema, and the hepatised stage of pneumonia. As most of the products of inflammation consist of protein compounds in some form or combination, the addition of one or two equivalents of oxygen render them soluble by conversion into the deutoxide or tritoxide, and permits their absorption by endosmosis into the adjoining vessels. Even tubercular deposits are known to consist principally of protein compounds; and we all know that the most effectual means of retarding or preventing their development consists in active out-of-door exercise in the pure air of the country, by which the system is more freely supplied with oxygen, and the effete products of interstitial decay more rapidly removed."

"The chlorate of potash has been quite generally used as one of the favourite remedies in *scarlatina.* I think that it is justly so regarded, and has fallen into some disrepute of late by the error of depending too much upon its unaided influence. It has generally been given with the idea, that in chlorine, something like a specific or antidote had been found for the poison of the disease. Now, in truth, the chlorate is a very valuable remedy for meeting particular indications in the treatment of this disease; by arresting the ulcerative inflammation of the fauces, and by its arterialising properties, supporting the recuperative powers of nature when aided by other appropriate treatment. In this connexion I will state, that I have been in the practice of late of giving it in combination with carbonate of ammonia, with the best effects. Other aids must vary according to circumstances; but I will mention two which I have found of great value in almost all cases, the application of pure nitrate of silver to the fauces, and of glycerine to the whole surface of the body. Some considerations induce me to think that it is not the chlorine, but the liberated oxygen which constitutes the chlorate a remedy of value in scarlatina and kindred diseases."—*New York Journal, July, pp.* 1—27.—*Med. Times and Gazette, Aug.* 27, 1859, *p.* 219.

157.—*Chlorate of Potash.* By WEBDON COOKE, Esq., Surgeon to the Royal Free Hospital.—In my hands chlorate of potash has proved a tonic of the very highest value in all adynamic conditions, and at all ages; but more especially in hectic states of the system when

quinine and iron were inadmissible. So powerful is it in oxidizing or decarbonizing the blood, when the liver and skin have failed in their offices, that I believe from a very large experience of its effects at the Royal Free Hospital, that there is no tonic comparable to it in the sequelæ of the exanthemata, (otorrhœa, anasarca, and cachexia of all kinds,) in all scrofulous diseases, whether of bone, gland, or tissue, as well as in those indicated by Dr. Osborn,—viz., necrosis, leucorrhœa, gleet, and secondary syphilis. Agreeing with Dr. Osborn in the inexpediency of its administration in all acute inflammatory attacks, I think that in reviewing those numerous diseases in which there is want of power, I know of none in which the chlorate of potash, either solely, or in combination with iron, quinine, or the other vegetable tonics, may not be advantageously employed.

I believe the dose of this medicine is now pretty accurately defined. From one to fifteen grains three times a day is the range I have found effective and safe. I give the child of one year old, one grain; of two years old, two grains, and so on up to seven years; after that a more gradual increase—say, a grain every two years, until about eighteen years, when the full dose of fifteen grains may be employed; and this dose rarely requires to be increased at any age.

Having said thus much of the value of chlorate of potash administered internally, I would beg permission to add a word or two on its remarkable topical effects in various ulcers. It is invaluable in foul chronic ulcers of the legs; in tertiary sores not of an inflammatory character; in ulcers of the mouth and tongue, arising either from syphilis or cancer, or cancrum oris, or necrosis of the jaws; and especially so in cleansing and deodorizing, and indeed healing, many of the foul cancerous ulcers occurring in various parts of the body. I I have employed it in all these lesions at the Cancer and the Royal Free Hospitals, as well as in private practice, for many years, and am daily reminded of its inestimable benefit wherever there is an absence of active inflammation.

The strength of the solution must of necessity vary under different circumstances. In the greater number of instances, eight grains to the ounce of water is the strength I employ, but this is too strong for the mouth, and generally for the breast.—*Lancet, Oct.* 29, 1859, *p.* 449.

158.—*On the use of solid Perchloride of Iron.* By J. ZACHARIAH LAWRENCE, Esq.—A few months ago I drew the attention of the profession to the powerful local styptic properties of the *solid* perchloride of iron. I have since that time used it with the best effects, and, moreover, have the satisfaction of knowing through the manufacturers of this substance (Messrs. Hopkins and Williams, of New Cavendish-street), that since the appearance of my letter it has been in frequent demand by the profession generally for the purposes indicated.

Since then I have found a superior method of employing it. If the

solid perchloride of iron be kept in a bottle, a small portion of it after a time deliquesces into a thick brown fluid, which is constantly kept in a state of super-saturation by the undeliquesced portions of the salt. This liquid, applied by means of a spun-glass brush to a bleeding surface arrests the bleeding almost instantaneously. This mode of application is particularly valuable in applying the styptic to such cases as excision of the tonsils, bleeding from the deeper-seated gums, &c. I may further remark that I have never noticed any inflammatory action following the use of the solid perchloride.—*Med. Times and Gazette, Aug.* 27, 1859, *p.* 219.

159.—THE COAL TAR DISINFECTING POWDER OF MM. CORNE AND DEMEAUX.

The latest Parisian novelty in medicine—very appropriate to the fetid season of summer in towns, and particularly interesting to Londoners—concerns the disinfecting properties of common coal tar. The subject, brought forward by MM. Corne and Demeaux, appears to be creating quite a sensation in the French capital. It has been laid before, and been discussed at the Academy of Sciences, and the Academy of Medicine, and has been experimented on at La Charité and at Alfort; and all the French journals are full of it. The history of the matter is sufficiently simple. M. Edmond Corne, physician at Libos (department of the Lot and Garonne), recently found out that a mixture of coal tar and plaster in various proportions, when put in contact with fetid and putrifying substances, possessed the valuable property of deodorising them completely; and, at the same time, if the matters contained fluid, it absorbed the liquid, and converted the whole into a dry, solid mass, free of smell. Perceiving the importance of these facts in a sanitary point of view, M. Corne proposed to employ his disinfecting powder for the purpose of deodorising and solidifying the fæcal matters, which, in Paris, instead of being drained off to pollute the Seine, are allowed to collect in covered pits, and are carted away in closed waggons early in the morning. The accumulation of the night soil, and the process of its removal, are attended with the horrible stenches which are so common in many of the houses and streets of Paris. Sanitary science, however, does not seem attractive to Frenchmen; and the discoveries of M. Corne might have remained long enough unnoticed, if the happy thought had not occurred to Dr. Demeaux and himself of applying his disinfecting powder to surgical uses, for the purpose of deodorising the offensive discharges from suppurating wounds and gangrenous ulcers. The first trial was made in the private practice of Dr. Demeaux, and succeeded beyond expectation. The authors then laid the subject, in this new point of view, before the scientific and medical institutions of Paris, and commenced a series of experiments at the Hospital of La Charité, under Professor Velpeau, who has afforded every encouragement, and

has lent his powerful aid to bring the discovery into notice. The general results have as yet been very favourable; and from the great attention which is turned to the subject, the value of the proposed means will soon be satisfactorily settled.

The disinfecting powder consists simply of 100 parts of plaster, mixed with 1 to 5 parts of coal tar, and thoroughly triturated. The mixture forms a gray powder, with a slight bituminous odour. It is applied directly to the suppurating surfaces. Usually the dry powder is sprinkled over the wounds; or it may be made up into a kind of ointment, by mixing it with olive oil, which binds the powder together without destroying its absorbent power; or it may be mixed with other fatty substances; the ointment being spread thickly on lint, and applied like a poultice. Usually the direct application of the powder is well borne; and, in consequence of its absorbing properties, no lint is required. Sometimes, however, the charpie is necessary. The dressing is renewed as frequently as possible.

The results of this mode of treatment, as experimented at La Charité under Professor Velpeau, before his numerous students, appear to have been uniformly successful. A gangrenous wound, with a profuse and fetid suppuration, when dressed with the powder, was instantly deprived of all disagreeable smell. In the case of an ulcerated cancer, with an ichorous discharge, presenting the characteristic fetor, the odour was in the same way instantly and completely destroyed, when the dressing was applied. Ulcers of the leg were entirely freed from smell in the same manner. Dressings, poultices, &c., saturated with fetid pus, were completely disinfected by contact with the powder; decomposing fluids, gangrenous products, mortified tissues, pieces of dead bodies in an advanced stage of putrefaction, were also instantly deodorised by the same means. The disinfecting substance seems to stop decomposition; and it keeps off insects, and prevents the production of maggots. The experiments at the Veterinary School of Alfort, under Professor Bouley, made on a large number of wounds and putrid matters, gave results entirely in accordance with those obtained by Professor Velpeau; so that, as far as facts have yet shown, the means promises to be of decided service in surgery.

It appears that the advantages possessed by the disinfecting powder as a surgical dressing are twofold: for it not only disinfects the discharges, but it at the same time absorbs them,—the former property being probably due to the tar, and the latter to the plaster. It is obvious that the powder may be applied to a great variety of uses besides surgical dressings, and in particular for preventing the smell and putrefaction in dissecting-rooms. One other advantage which the disinfectant presents is its cheapness; the ingredients may be had for almost nothing, and at the present time the powder of Corne and Demeaux sells for about a shilling the hundred-weight in Paris.

Of the importance of disinfectants there can be no doubt: they are

the great desiderata of the day. It should not be forgotten, however, that the invention of MM. Corne and Demaux, and its applications, have been to a great extent, anticipated in England. It is mentioned by M. Dumas, in the discussion at the Academy of Sciences, that coal-tar has been used in England for disinfecting animal matters, and has been even proposed to prevent decomposition of the dead bodies on the field of battle. But no notice is taken of M'Dougall's disinfecting powder, which has been known and used in this country for some time, and which presents a close resemblance in composition and properties with the powder of M. Corne. M'Dougall's powder consists of carbolic sulphite of lime and magnesia, with 5 per cent. of carbolate of lime; carbolic acid being the principal antiseptic and deodorising ingredient in coal tar. It appears, therefore, that the powder of the French physicians owes its virtues to the same essential constituents which are present in M'Dougall's powder, viz., carbolic acid and lime. Professor Simpson has been in the habit of using M'Dougall's disinfecting powder as a deodorizing application in cancer of the uterus; he has employed it also for preserving dead bodies; and he has suggested that the embalming of mummies may be due to carbolic acid, and not to creosote, as Dr. Cormack has supposed. M'Dougall's powder was also proposed last summer by Professor Anderson of Glasgow for purifying the Clyde. It should be mentioned, that we owe the discovery of the powder known as M'Dougall's to Sir Andrew Smith, the late Director-General of the Medical Department of the Army. But while the credit which belongs to previous inventions must not be overlooked, it is well that the attention of French scientific men has been so prominently attracted to the subject. It is of immense importance to sanitary science, as well as to surgery, that the disinfectant properties of the products of coal-tar should be fully investigated. The efficiency of carbolic acid and its compounds seems to exceed that of any disinfectants yet discovered.—*Edin. Med. Journal, Sep.* 1859, *p.* 263.

160.—REPORTS ON COUP-DE-SOLIEL IN H. M.'s 71st REGIMENT (RIGHT WING) IN CENTRAL INDIA, 1858.

By Dr. W. Simpson, Surgeon to H. M.'s 71st Regt.

[The average strength of the wing during the months of May, June, and July, 1858, was 417 non-commissioned officers, rank and file; 89 cases of sun-stroke occurred, of which 13 died suddenly, 13 afterwards in hospital. This was attributable to long marches performed on consecutive nights.]

The following symptoms were invariably present:—an intensely hot, dry skin, which lasted till even after death in those that died within 12 or 16 hours; a sense of constriction of the chest and laboured breathing, with a feeling of a heavy weight just below the

ensiform cartilage. Great prostration of strength, accompanied very frequently with inability to answer questions without weeping (the strongest and most robust were not exempt from these symptoms); a tumultuous action of the heart, with strong pulsation of the carotids; pulse varied much, but was never full and hard; head-ache referred more particularly to the summit of the head, conjunctivæ injected, pupils acted to the stimulus of light, unless during convulsions, or during the stage of coma, when they were fixed and contracted. In several instances, however, they became suddenly dilated for a few minutes, after being fixed and contracted to a point. Countenance generally pale at the commencement, but in those cases of a severe character, or that had a fatal termination, it assumed a leaden hue; the urine was never entirely suppressed, but it passed off involuntarily drop by drop; bowels were generally costive, though several cases occurred the bowels being quite natural in every respect. There was also a great desire to sleep, so much so that if not checked at first, it passed into coma, which almost invariably terminated in death. Loud moaning during the stage of coma was almost invariably present. Death either occurred from convulsions, most frequently of an epileptic character, or from coma. The symptoms, however, varied according to the severity of the attack, and the constitution or temperament of the patient. Death sometimes occurred almost instantaneously. One man just before arriving in camp at Banda, (the regiment did not arrive on the encamping ground this day, 12th May, till after noon, and the thermometer was 120° Fah. in the tents,) after a march of over 20 miles, fell down in the ranks, uttered a shriek, and expired in a few minutes. A man at Koonch, before the engagement with the rebels took place, fell asleep for a short time during a halt that occurred (the sun being fully two hours above the horizon), and on being roused up answered questions with difficulty, and he had lost the use of his limbs. Others again were seized with maniacal symptoms: a man at Calpee made a rush at the Hospital Beestie and tore the mussock from him, and on remonstrating with him I remarked he was quite deranged in his mind. After getting some water to drink (which he swallowed in a painfully ravenous manner), and having a quantity poured over his head and body from a height, he became quiet, and shed tears abundantly. Others again smiled and laughed (unnaturally) at one time, and at another became excited and alarmed, if spoken to, and any attempt at deglutition brought on convulsions. In short, some of the cases presented symptoms of apoplexy, some of epilepsy, mania, and hysteria. The disease under consideration, when of a severe character, more closely resembles apoplexy or epilepsy (which often merges into apoplexy) than any other disease I am acquainted with. In many of the cases that came under my care, genuine epileptic convulsions ensued, lasting from 5 to 10 minutes, with intervals of variable duration of perfect consciousness and rest. During the stage of coma, the pupils were

fixed and contracted, and the conjunctivæ injected, and there was loud moaning till a few minutes previous to dissolution taking place, which last symptom, however, I have never heard in pure cases of apoplexy that have come under my observation.

Post-mortem Appearances.—Time and opportunity did not allow of *post-mortem* examinations being made to any extent on the line of march, during the late campaign, when fatal cases of sun-stroke were of common occurrence, and those that were performed elucidated little or nothing regarding the nature of the disease; the only abnormal appearances were an excess of venous blood to a greater or less extent in the brain, and congestion of the lungs and liver. This want of balance of the circulation, taken in conjunction with the symptoms during life, induces me to believe that sun-stroke is attributable to the functions of all the organs that free the blood from those matters that are injurious to the system being either entirely or partially suspended, such as the lungs, liver, kidneys, and skin. The blood is not perfectly oxygenized in the lungs, the bowels as a rule are confined, and the healthy action of the liver is interrupted (this last statement is, I think, proved by the fact that those men who had severe attacks of sun-stroke have since suffered from derangement of the liver). The kidneys evidently do not perform properly their functions: the urine is not suppressed, but it is passed involuntarily drop by drop, and in diminished quantity. The skin is pungently hot, dry, and harsh (every man seized with sun-stroke, and who could answer questions, informed me that he had not perspired for a greater or less extent of time, sometimes not for days, previous to being attacked, and that he had enjoyed good health as long as he perspired, but that on the perspiration being checked he felt dull and listless, and unable to take much exertion without making a great effort). No doubt this state of the body is attributable to the nervous system being over-stimulated by exposure to the sun, more particularly when the thermometer ranges from 110° to 120° Fah (which was too often the case in the tents occupied by the men during the day in May, June, and July), together with extreme exhaustion from long-continued exertion and want of rest.

Treatment.—The chief point in the treatment, in my opinion, is to rouse the nervous energy, which is most effectually accomplished by pouring cold water from a height over the head and nape of neck, and dashing the same in the face and over the chest, and this should be persevered in as long as there is any tendency to sleep or to coma; at the same time the patient should be roused up by speaking to him, and if necessary by shaking him. As soon as he can swallow, brandy or wine and ammonia should be given in liberal quantities, and frequently repeated; and calomel and croton oil administered, to act on the liver, and move the bowels. The most distressing symptoms a man labouring under this disease complains of are—a sense of suffocation—and a dead weight at the *scrobiculus cordis*. I have found

that rubbing for some time turpentine over the chest and stomach affords the most effectual relief. These remedies, together with stimulant enemata and mustard cataplasms to the legs, are more likely to prove successful than any I am aware of. The after-treatment consists of nourishment and stimulants, such as arrowroot, beef-tea, wine or brandy and ammonia, together with cold applications to the head, blisters to nape of neck, and acting on the liver and bowels. Bleeding, either locally or generally, is inadmissible, more particularly if there is exhaustion from previous exertion. No patient can be considered out of danger till the skin becomes cool and moist.

I would beg to offer a few suggestions as to the best mode of preventing so fatal a disease. When, during a campaign in the hot season, Europeans are exposed to the sun, encountering much exertion, and at the same time are deprived of sleep during the coolest hours, whilst they have to sleep, and partake of their meals, during the hottest hours (thereby retarding digestion, and producing a tendency of blood to the head), cases of sun-stroke no doubt must occur; still great improvements might be introduced as a means of prevention. The dress as at present constituted is defective in many respects: it is imperatively necessary to protect, not only the head from the rays of an Indian sun during the hot weather, but also the vertebral column and body generally; the dress as worn by the soldiers accomplishes neither of these ends. The forage-cap is not sufficiently thick, the crown of it rests on the top of the head, it affords no means of ventilation, and the cap-cover is little better than useless, as the men generally turn the loose curtain of it either inside or outside the cap, in order to (as they have often informed me) obtain more air, and enable them to feel cooler. The coat is made of a very thin material, and affords no protection either to the spine or body, and soldiers will not (generally speaking) wear flannel if they can avoid it. I would recommend that the head-dress consist of one piece, affording cover for the nape of the neck, and shade for the eyes; it should be made of strong, close basket-work, and well padded externally, and covered with the same material and colour as the present dress introduced by Lord Clyde (during the hottest months of the year, and when not in presence of an enemy, a white puggry might be worn over this cap to reflect the heat); it should be of sufficient height to allow of a vacant space between the top of the head and the crown of the cap; and, lastly, it should be furnished with means to afford ventilation. From personal experience, I am convinced that it is the best sort of head-dress, but it should be made sufficiently strong to permit of it being made use of as a support for the head when the owner of it is in the recumbent position, for during the halts that take place in the night on the line of march, as well as on many other occasions, men lie down and often fall asleep, their heads being lower than their bodies (and I am induced to think that this position of the body frequently induced head symptoms during

the late campaign.) If a cap of the kind I have attempted to describe is worn, an excellent pillow or support for the head is constantly at hand. I would recommend that the coat should be made of the same material and pattern as at present, but that it should consist of two layers, or have lining, with wadding between; it should be made very loose, not only at the neck, but everywhere, more particularly at the arms, and at the armpits. A coat of this description would afford a protection for the body from the sun, and it would not be felt too warm if made sufficiently loose to admit of ventilation.

From the difficulty (and frequently from the impossibility) that was experienced in the 71st Regiment during the late campaign in obtaining a sufficient supply of water for cooking purposes, and for drinking, in consequence of Bheesties deserting, and dilatory in performing their duties, I would recommend that every regiment or wing of a regiment in the field should be allowed a man (well paid) to superintend the Bheestie department, and who would be held responsible that an ample supply of water was always at hand, on the line of march, in the field while engaged with an enemy, or in camp. Quarter masters and officers have too much to engage their attention, and are at the same time frequently too much exhausted, to ensure a sufficient supply of water being always at hand; and the want of this most necessary article is severely felt by the men, and too often produces fatal consequences.

No regiment or body of men should be marched during the hot season, unless camels are attached to it in sufficient numbers to convey, not only the tents, but also the cooking utensils, that the men may get under cover, and be provided with breakfast, as early in the day as possible: if carts are used, great delay is always experienced. —*Transactions of Bombay Med. Society*, 1857, 1858, *p.* 246.

161.—ON ETHER AND CHLOROFORM.

By Dr. G. HAYWARD, late Professor of Surgery in the Massachusetts Medical College, Boston, U.S.A.

[The profession is scarcely prepared to receive without qualification the opinion that ether should be substituted for chloroform in all cases, to the entire exclusion of the latter. But the author observes that in no instance has there been any alarming or serious symptoms from the use of sulphuric ether, even when used to a great extent undiluted with air. It does not produce anæsthesia quite so speedily as chloroform.]

There is no doubt in my mind that sulphuric ether should be used as an anæsthetic agent to the entire exclusion of chloroform. It is as efficacious, and I should say without hesitation, after having seen chloroform administered by others in many cases, that ether produces a more complete state of unconscious insensibility. Its effects pass off sooner, and less vomiting, nausea, and headache follow its inhalation

It is as easily administered. All that is required for its administration is a bell-shaped sponge with a cavity large enough to cover the nose and mouth. If the patient breathes it gradually, little or no irritation is produced in the larynx and air-passages, there is but little if any cough or sense of suffocation, nor a distressing or unpleasant symptom of any kind.

There may be some persons to whom the odour of ether is offensive and irritating, but they are comparatively few, and even they can be brought under its influence without any very great annoyance.

The quantity of sulphuric ether required to produce anæsthesia depends very much on the manner in which it is administered. If the patient is made to inhale it rapidly, and the atmospheric air is to a great extent excluded, a small amount will be sufficient. From four to eight ounces may be regarded as the average quantity. It is rare to meet with a case in which less than four ounces will be used; and in protracted operations, in which it is desirable to keep up the state of insensibility for a length of time, I have often given more than eight ounces. The ether should at first be poured on the concave part of the sponge; one or two ounces will be enough for this purpose. When the inhalation is going on, it is better to pour the ether on the outside of the sponge, so as to avoid the necessity of removing it from the face. From half an ounce to an ounce should be used at a time in this way, till anæsthesia is produced. When this takes place, the patient is wholly unconscious, and has no control over the voluntary muscles. He is unable to raise his eyelids when told to do so, and gives no indication of hearing or consciousness, if spoken to in a loud tone. The pulse usually becomes slower than the ordinary standard, though at the beginning of the inhalation it is quicker.

It is, I am confident, a perfectly safe anæsthetic agent. I have not been able to find any well-attested case of death from its inhalation. There may have been such, but they have never come to my knowledge, though I have taken unwearied pains to obtain information on this point.

It has been said, that this may be attributed to the fact that ether is not extensively used, but that if it were, there would probably have been as many fatal cases in proportion from it, as from the inhalation of chloroform. But this statement is not strictly correct; for though ether is not employed as an anæsthetic agent to any extent, if at all, in Great Britain or many parts of Europe, it is used in Lyons, Naples, and is almost the only one that is administered in the principal hospitals of the United States of America, where its now familiar properties were first discovered.

I have given it in several hundred cases, and witnessed its exhibition by others in as many more. I have administered it to infants not three weeks old, and to persons more than threescore years and ten, and have never in a single instance seen an alarming or distressing

effect produced by it. On the first introduction of ether into surgical practice, it was not thought safe to allow persons to inhale it in whom there was reason to believe there was any disease of the heart or lungs, or who had any tendency to an affection of the brain and nervous system. But for some years past I have been in the habit of administering it to individuals of this description, and have as yet had no cause to regret it. In such cases I have thought it prudent to have the vapour of the ether inhaled more slowly, so that it may be more diluted with atmospheric air than under ordinary circumstances; of course, the patient could not be brought as soon under its influence as when taken in the ordinary way.

The state of the system which is produced by the inhalation of ether is that of narcotism, similar precisely to what is induced by drinking immoderately wine or other alcoholic liquors. It is a state of intoxication more transient and less dangerous than that from alcohol. Its effects pass off sooner, because the vapour of the ether begins to escape from the lungs as soon as the patient ceases to inhale it; while alcohol taken into the stomach is carried into the circulation, and mixes with the blood, and in this way acts longer, if not more powerfully on the brain, though its narcotic effect is not so soon produced. It is possible that life might be destroyed by the inhalation of ether, if it be continued uninterruptedly for a great length of time and a great quantity inhaled. Fatal congestion of the brain might thus be produced, as sometimes happens when alcoholic liquor has been taken to excess. But no person of ordinary prudence would administer it in this way. Long before the occurrence of such a result, symptoms of an unequivocal character would indicate the approaching danger.

When death follows the inhalation of chloroform, on the other hand, there is no merciful premonition. The late Dr. Snow, whose experience on the subject was perhaps greater than that of any other person, thought that "*sudden palsy of the heart* is the cause of sudden death from chloroform." In death by asphyxia, the heart beats for some minutes after breathing has ceased; "whereas in some cases of death by chloroform, the breathing has been proved to go on up to the time the pulse stopped, and after it."

With the hope that those who may have occasion to employ any anæsthetic agent will at least make a fair trial of *rectified sulphuric ether*, I respectfully submit these remarks to my professional brethren. —*Brit. and For. Med.-Chir. Review, Oct.* 1859, *p.* 484.

162.—ON THE INTERNAL EMPLOYMENT OF MEDICINES IN VAPOUR.

By Dr. J. Birkbeck Nevins, Lecturer on Materia Medica in the Liverpool Royal Infirmary School of Medicine.

[Many diseases of great importance, though perhaps constitutional in their commencement, and treated best by constitutional remedies,

are in their termination strictly local, and no longer amenable to the class of remedies before employed. Such are cases of chronic bronchitis, chronic affections of the chordæ vocales, the eustachian tubes, the frontal sinuses, and the passage of the nose. These cases require local remedies, and by proper management local remedies can be used. Thus, impalpable astringent powders may be inhaled in chronic bronchitis, or remedial vapours passed through the nose by expiration through that organ, or driven into the eustachian tubes, or frontal sinuses by forced efforts at expiration, when the mouth and nostrils are closed. The writer next gives a few interesting cases illustrative of the principle above laid down.]

A patient had suffered from complete loss of voice for above a year, not being able to speak above a whisper; the affection was evidently purely local, probably dependent upon a thickened condition of the chordæ vocales. She had no pain or any constitutional symptoms, and had long since given up treatment. She used the mercurial cigarette, to be described hereafter, for a month, and perfectly recovered. A patient in the last stage of phthisis suffered from pain in the larynx, and utter inability to sleep for days and nights together, from the incessant cough and expectoration. Other treatment had been without avail; and I then made him inhale the vapour of strong nitric acid poured into a saucer, and placed near his mouth. He soon experienced relief from it; the pain abated, and the cough ceased to such an extent that he obtained some hours of refreshing sleep. He continued to adopt this means of relief at intervals until his death.

The trouble and annoyance of strong nitric acid in the neighbourhood of a sick bed are, however, so great, that the inhalation of the nitrous acid fumes obtained by the combustion of nitrate of potash is far preferable, and is easily accomplished. A young lady, who suffered much distress from the cough in a rather advanced stage of phthisis, and could only lie on one side, found far more relief from the inhalation of the fumes arising from brown touch paper burning in the bottom of a breakfast cup, and held near to her mouth or far from it as her own comfort dictated, than she did from the employment of cough medicines, the local application of the solution of nitrate of silver, or any other means which she had employed.

In a very chronic case of offensive discharge from the nostrils, with a sense of uneasiness in the frontal sinuses, the patient was quite cured in about a month by the use of the mercurial cigarettes. He held his nose after taking a mouthful of the smoke into his mouth, and then forced it into his nostrils, in the manner sometimes practised by accomplished smokers.

Another patient, who suffered from polypus in the nose, and had been operated upon in London by Mr. Fergusson, and subsequently in this town by myself, is now able to keep the disposition to form fresh polypi in check, by smoking the cigarette, and expelling the

smoke through his nose, when he feels uneasiness which warns him that he has to fear a recurrence of the disease.

In the treatment of the form of deafness which is dependent upon an obstructed Eustachian tube, I have increasingly numerous cases in which the smoke forced into the tympanum from the throat gradually restores the sense of hearing. The circumstance which first led me to adopt this method was hearing a deaf patient on one occasion remark that, when he was sneezing the day before, he heard perfectly; the violent effort appeared for the moment to have dilated the Eustachian tube, and hearing was the result. I have at present under my care a patient who has been deaf for seven years, and he has benefited more by this method of treatment than by any other. In this case, however, simple brown touch paper made into cigars appears to be of more service than the mercurial cigarettes.

Such is an outline of the cases likely to be benefitted by this mode of treatment, and the various methods in which it may be employed. It offers a reasonable appearance of advantage in what are often very intractable diseases; and in bringing it more prominently before the profession, it is with the hope that it may prove a useful addition, in however small a degree, to the remedial agents at present in our possession. Modifications of the method itself, and the employment of other agents capable of being converted into the form of vapour will, no doubt, suggest themselves to the experienced practitioner, if he is satisfied by the results of trial that the principle itself is a beneficial one.

I use, for making the mercurial cigarettes, fifteen grains of nitrate of mercury, fifteen minims of strong nitric acid, and six drachms, or as much as may be sufficient, of water.

Dissolve the nitrate in the nitric acid diluted with the water, and aided by a gentle heat (such as the top of an oven), and soak in the solution thick white blotting paper (eight inches by six). Divide it into eight slips, which are to be rolled round a quill or pencil into cigarettes before they are quite dry, and gummed along the edge. If the paper is quite dry before it is rolled, it becomes brittle, and breaks in the folding.—*Brit. Med. Journal, Sept.* 24, 1859, *p.* 769.

163.—*Remarkable Effects produced by adding Sherry Wine to the Blood.*—Dr. William Addison describes these at length, as follows: At first there is no disturbance in the liquor sanguinis, or plasma, owing to the addition; but afterwards the fluid is seen by the microscope to contain multitudes of molecular particles, which, as Dr. Addison thinks, have come out of the red corpuscles. The corpuscles not only throw off these molecules, but also long threads or tails are projected by them into the fluid. Sometimes as many as five of these tails are seen issuing out of, and remaining attached to, a single corpuscle. They all terminate in a knob at the extremity, and wave

about in a very extraordinary manner. Many of them grow thicker: from being at first a delicate filament, they swell out to a considerable thickness, and then breaking away from the corpuscle, they continue a kind of wriggling movement in the fluid. Others remain attached to the corpuscles, and attain a very great length. At the same time, from the numerous molecules issuing from the corpuscles, the liquor sanguinis becomes troubled or disordered, as just described. Dr. Addison describes the corpuscles as undergoing various internal changes before the appearance of the tails, and he remarks that on the addition of the wine to the blood all disposition in the corpuscles to adhere in rolls is removed. Sherry wine alone will produce all the effects described; but the best manner of repeating the experiment is as follows:—Dissolve two grains of common table salt and one grain of carbonate of soda in half an ounce of water. Take a slip of glass and receive on it a "very small" drop of blood; then place, by means of a pipette, a small drop of the saline solution close to, but not touching, the blood, and add to this double the quantity of sherry wine. Let fall a thin piece of glass upon the fluids, and they will mingle in various proportions. To observe the effect of the fluids upon the corpuscles of the blood, the edges of the mixture, and not the middle of it, must be looked at. The fullest effects take place in half an hour. Dr. Addison appeals to this experiment to show that the corpuscles of blood very probably during life throw off morbid matters into the liquor sanguinis, and thus become a source of disorder or distemperature to the fluids of the blood. He argues that symptoms of fever arise from disorder of the corpuscles. Miasms in the air, he says, affect the corpuscles of the blood; a contagious virus is generated, and this is excreted from the corpuscles into the fluid. Thus he seeks to account for the sequence between fever and inflammation: fever appears when the corpuscles of the blood are diseased, inflammation when the fluid or plasma is disordered.—*Brit. and For. Med.-Chir. Review, Oct.* 1859, *p.* 521.

164.—*On the Treatment of Aneurism by Compression.* By S. A. Cusack, Esq., Surgeon to Steevens' Hospital, Dublin.—[Doubtless manual pressure is the best means of compressing the femoral artery in cases of popliteal aneurism—but it cannot be used successfully on account of the immense labour required to keep it up for any length of time. The nearer we can imitate this, the more successful shall we be in our treatment. Mr. Cusack recommends the use of conical weights suspended from a simple frame overarching the limb. The rounded point of the weight can be made to press accurately on the artery, and by means of additional discs of metal fitting on to the top of the original weight, the pressure may be increased to any required extent. About five pounds and a half will partially obstruct the arterial flow; eight or eight and a half completely. The author concludes his subject by the following rules to be observed:]

1. The patient should be subjected to the usual diminution of diet,

and sedative treatment; abstinence from drink being particularly enjoined, as recommended by Dr. Bellingham.

2. The patient having been put on a moderately soft mattress, and a pillow placed under the knee, a weight of about five and a half pounds should be applied every alternate hour, during the day, to the artery at the groin, and withdrawn at night. The lesser end of the leaden weight which I use is rounded off to the size of a hemisphere, of one inch in diameter; and the integuments are protected by one or more layers of chamois leather.

3. After the lapse of six or eight days, or sooner if the collateral circulation has been fairly established, the weight should be increased to eight and a half pounds, so as to imitate the ligature, and completely obstruct the main artery, care being taken that it is not left on more than an hour or an hour and a half at a time. In this way an immediate cure may sometimes be effected by the formation of a coagulum; or, if not, more slowly by the deposit of fibrine.—*Dublin Quarterly Journal, Nov.* 1859, *p.* 340.

165.—ON THE PATHOLOGY OF OVARIAN DROPSY.

By Dr. J. Y. Simpson. Professor of Medicine and Midwifery in the University of Edinburgh.

The ovary, like all other organs of the body, is liable to various forms of disease, and to become the seat of different kinds of morbid growth. But the form of disease or degeneration to which it is above all others prone, is that commonly spoken of as dropsy of the ovary, consisting of a hypertrophy of the organ from the development in it of a number of large cysts or sacs filled with serous fluid. The ovary consists normally of an aggregation of many minute cysts—the Graafian vesicles, which are the essential elements of the organ, inasmuch as in them the ova are formed. These cysts are imbedded in a fibrous stroma, serving to support and separate the different sacs, and to permit of the ramification of vessels and nerves in their exterior. Now, it is a well-known and often exemplified law in general pathology, that when any organ becomes the seat of a new or morbid growth, this new or morbid growth most readily takes on a form of development leading to the formation of a tissue akin to the normal anatomical structure of the organ in which it has its seat. It is in accordance with this great law that the ovary is so pre-eminently prone to become the seat of cystic degenerations. But we meet with various forms of cystic degeneration or disease in the ovaries and their neighbourhood. Within the external margin of the broad ligament, where the peritoneal layers pass downwards and backwards from the fimbriated extremity of the Fallopian tube to meet and invest the ovary, there lies a fibrous-looking, fan-shaped structure, imbedded in the folds of the peritoneum, and known as the organ or body of Rosenmüller—a body of but little importance in the adult, and rarely made

a subject of anatomical or pathological observation. In the fœtus, however, it is relatively much larger than in the adult, and is an object of correspondingly greater importance. I have sometimes had occasion already to refer to some of the analogies between the different segments of the male and female organs of generation, and to point out the unity of structure that pervades the two sets of organs; and I may here state that the body of Rosenmüller is in all probability, as pointed out by Kobelt, who has named the organ in question the Pro-ovarium, the analogue in the female of the male epididymus. They each represent, at least in their respective sex, the remains of an organ of great size, and apparently of great importance in fœtal life—the Wolffian body. But what I want more particularly to say at present with regard to the pro-ovarium is this, that being the remains of an organ of tubular structure, the tubuli do not all become entirely obliterated and degenerated into mere fibrous cords, for some of them retain their original character till far on in adult life, and occasionally a secretion of serous fluid takes place into these cæca or tubes, distending and enlarging them, and so producing one of the forms of cystic degeneration so often met with in this locality. The form I allude to consists of cysts between the layers of the broad ligaments, or elongated pediculated cysts attached to the fimbriated extremity of the Fallopian tubes, or their neighbourhood. It is not, however, of this form of cystic disease that I am now to speak, nor of that form of dropsy, which depends on partial obliteration or occlusion of the Fallopian tube and its distension by the secretion of fluid into it between two obliterated points. We put these out of the category of cases of ovarian dropsy, seeing that they have not their seat in the ovary itself, but only in the organs nearest it, and pass on to the consideration of the various forms of cystic disease to which the ovary itself is liable.

1. *Unilocular Dropsy of the Ovary.*—The simplest form of ovarian dropsy is that where there is one single large cyst developed in one or other ovary, with very thin walls, and filled with a simple serous fluid. This is the form of the disease which we most desire to meet with in practice, for it is that which is most amenable to treatment, and in regard to which we may always most confidently hope for a favourable termination. Unfortunately, however, the unilocular ovarian dropsy is a very rare type of the malady; for far more frequently we find it presenting itself, as in the case of all the hospital patients you have had occasion to see, in the form of

2. *Multilocular Dropsy of the Ovary.*—In this form of tumour we have not one single cyst, but a vast number of cysts of different sizes, usually, however, with one or two of these greatly predominating in size over the others. Multilocular ovarian tumours may be found of every possible size; and it is among this class that we find those rarer cases from time to time occurring in which the tumour is recorded to have attained to almost fabulous dimensions. At first,

however, they are of small size, and the diminutive cysts of which they are made up are all pretty nearly of the same dimensions. The great subsequent bulk of the tumour is usually produced by the excessive development of a few of the peripheral sacs, one or two of which usually come to be much more distended and prominent than any of the others. It is a matter of very great practical importance to remark and remember, in regard to the growth of multilocular ovarian tumours, at what part of the mass it is that the greatest enlargement of the several cysts generally takes place. Fortunately for the prospects of successful treatment, the cyst or cysts which take on the greatest and most rapid growth are, as I have said, those which are placed towards the surface of the tumour, and at its upper and anterior surface. The largest cysts thus, as a general rule, fortunately come to lie, as development proceeds, high up in the abdominal cavity, and closely applied to the internal aspect of the anterior abdominal walls, through which they can most readily be reached by the trocar and canula, and thus most readily evacuated and obliterated. This development of the cysts in the superior and anterior aspect of the periphery of the tumour takes place in accordance with a general pathological law, viz., That the extension of a morbid growth,—especially if it contains fluid,—goes on most actively in the direction where it meets with least resistance to its increase from the normal anatomical structures of the body. The firm floor of the pelvis presents an unyielding obstacle to the growth of the tumour in a downward direction, so that the cysts at the lower part of the tumour having no room to become enlarged and extended, remain, in general, comparatively small and undeveloped; while the cavity of the abdomen, filled only with the soft and mobile viscera, and closed only in front by the distensible abdominal muscular wall, affords free space for its enlargement upwards and forwards. In this direction, accordingly, the development of a dropsical or multilocular ovarian tumour chiefly occurs, and partly by the breaking down of the septa between cysts originally distinct, but more by the secretion into the cysts of a quantity of serous fluid, or gelatinous matter, the cystic mass often finally ends in the formation of a single large prominent cyst, or of two or three prominent and predominating cysts, which then become more accessible for tapping. Sometimes you will find a few cysts of smaller size lying higher up even than this large and prominent sac. For occasionally when cysts are at first divided by very thick dissepiments, these may resist the process of atrophy which occurs in the great majority of them, and leads to their destruction, and the fusion of contiguous cells; and then the cysts thus surrounded by a thick wall may remain even in the very summit of the tumour, projecting into the cavity of the large cyst, and appearing like a new tumour growing on the interior of its wall. But fortunately for the practitioner, I again repeat, it is not the cysts which are situated lowest down in the pelvis that grow the quickest, and enlarge the most, but

those which are situated above, and stretch up behind the thin abdominal parietes, through which they may readily be reached by the point of the trocar.—*Med. Times and Gazette, Oct.* 29, 1859, *p.* 423.

166.—*Peculiar Effects of Phosphorus.*—At a session of the Cercle de la Presse Scientifique, in Paris, the Abbé Moignot directed attention to two facts, novel, and fit to figure in the pathogenesia of a poison, already charged with so many mischievous properties. Females, being *enceinte*, breathing air filled with phosphoric emanations in the establishments where matches are made, are sure to abort; and this result is so common and well known, that, in localities where the manufacture of matches engages a large number of workmen, the women profit by it to rid themselves of the product of conception. The abbé made this statement on the authority of a pious ecclesiastic, who guaranteed its authenticity. In men submitted to the same conditions, phosphorus vapours induce, after a little while, a vehement excitation of the generative functions. It is now left to the profession to verify the truth of these statements, full of interest, and susceptible, possibly, of being made useful, not only in prophylaxis, but also in therapeutics. Mons. Chevallier has commenced an investigation of the subject, which will be afforded the public as soon as any reliable results have been obtained.—*Jour. de Chim. Méd.*—*American Med. Monthly, June* 1859, *p.* 459.

167.—*Removal of Rings from Swollen Fingers.* By E. Garraway, Esq., Faversham.—[The following method of removing a ring from a swollen finger is not so generally known as it deserves.]

A reel of cotton is wound evenly round, beginning on the extremity of the finger and bringing each coil into close apposition with the preceding, until the ring is reached. A needle is then threaded with the cotton, and passed under the ring, and the thread is carefully unwound from the finger. The ring follows each coil as it is successively unrolled, and by almost imperceptible degrees is brought over the knuckle and removed. Care must be taken that the cotton is wound on evenly, particularly over the protuberant and swollen knuckle, or an entanglement will occur in the unwinding. A small curved needle will pass more readily under the ring than a straight one. The process requires time, care, faith, and patience; but the reward is ample in the gratitude of the suffering patient, the signet of whose marriage bond has been saved from destruction.—*British Med. Journal, July* 9, 1859, *p.* 541.

168.—*Iodide of Potassium in Hydrocephalus.* By Dr. Carson, Coleraine, Ireland.—[The fourth volume of the *Retrospect* contains a very interesting paper by Dr. Roeser on the exhibition of iodide of potassium in the last stage of acute hydrocephalus.]

When I saw this paper in 1841, I had a case of hydrocephalus on my hands. The patient was, as far as I could judge, completely hopeless. All the ordinary treatment, such as leeching, cold applications, extensive blistering, mercurial action, &c., had been adopted without the slightest benefit. The child lay insensible for a considerable time, with dilated pupils, squinting eyes, and frequent convulsions: he was in the last stage of the disease, and apparently near his end. I gave him two grains of the iodide of potassium every second hour, and he made a perfect recovery. I have had another opportunity, during this present month, of testing the value of this plan of treatment. Miss ——, aged five, after a slight term of gastric derangement, was suddenly seized with an attack on her brain. The acute stage was not violent, and passed speedily over. But the effusion progressed steadily in spite of mercurial action, blisters, &c. She was incapable of being raised, and passed urine and fæces without being conscious of it. The pupils were as wide as they could be, but there was neither squinting nor convulsions. There was not the least sign of improvement at the end of twelve hours after the mercurial action was established. I then put her on the two grains of iodide of potassium every second hour, and stopped all other treatment. On the second day the sensibility had so far returned that she could be annoyed by rubbing the blistered surface on her head, and she was aware of the calls of nature. On the third day she cried when moved on the pillow, and at the end of the fourth day she was perfectly sensible, and the pupils had returned to their original condition. She progressed rapidly after that, and is now as well as ever.—*Med. Times and Gazette, March 5*, 1859, *p.* 245.

169.—*The Dietetic Treatment of Defective Lactation.* By Dr. C. H. F. Routh, Physician to the Samaritan Hospital for Women and Children.—It has been long known that one of the most effective methods of increasing the flow of milk in all animals is to give them an abundance of food; and it is almost exclusively this plan of treatment which has been followed out by practitioners of the day in increasing the flow of milk in the human female. Simon had proved already by a special experiment made upon a woman in very poor circumstances (and in whom he examined the milk at fifteen periods, commencing with the second day after delivery), that in proportion as he gave her good food, so in proportion did the quantity of solid matter in the milk increase, albeit the quantity of liquid matter was not so much affected. Hence it is that practitioners seem to have so much faith in this method of increasing the quantity and quality of milk, that they rarely adopt any other. The quantity of food given is far more closely investigated than the quality. Here, again, much that I have before said on the subject of milch cows or goats feeding, in former papers, applies equally to a suckling woman. It is the same common office to be performed in both cases. There is, however, this differ-

ence: The plan to be adopted, with a woman, is to produce milk not only sufficient in quantity, but rich in quality; and in this respect, therefore, the disadvantage of a diet too exclusively vegetable is to be guarded against. Such food generally makes the milk thin and serous; and it is only when it is rich in leguminous plants, and in the higher cereatia or flesh, *i. e.* when a due quantity of nitrogenous matter enters into the vegetable aliments taken, that both the quantity and quality of milk supplied are good.

Experience among suckling women proves the efficacy of analogous alimentation. First among the grains are lentil powder, or the so-called revalenta; but pea-soup and bean-soup have also a marked effect in improving the flow and richness of milk. The lentil and bean, however, is preferable to peas, where they are as easily procurable. Besides the better taste, the first is slightly aperient, and the latter does not produce flatus either to mother or child, which peas are very apt to provoke.

There is a remedy that has some notoriety among women in the present day, viz. whiting-soup, which is generally believed to provoke a flow of milk. I believe this is true, but that the effects are somewhat exaggerated. Still it is a good change: fish, and particularly those varieties which are rich in phosphorus, I allude to oysters and crabs, are very efficacious. Of course these last must be sparingly taken at first, and particularly during the first months of suckling, because they do not always agree with the infant, producing urticaria and roseola; but where this effect is not produced, these kinds of food afford a ready means of supplying the phosphates, which are so beneficial to both mother and child. As far as my own experience, however, goes, I give very much the preference to Conger-eel soup. It is not generally known, but is I am told the case, that it forms the basis of all rich and nourishing soups; and for this reason our French brethren, who have so much taste for "potages," import them in immense quantities from this country, where they abound. As a soup, it is peculiarly nourishing, and very readily improves both the appetite and the strength. Like lentil powder, the stomach will often retain it when it will reject all other kind of food. Mr. Jones, of Jersey, speaks highly of it, and gives a case in which, after all other means had failed, it checked vomiting after chloroform. Its comparatively cheap price also renders it very easily obtainable by the poor. Crabs as a remedy for increasing the flow of milk, is of very old date. It is recommended by the author of "Gynæciorum" (p. 634, A). He also recommends for the same object, a blueish coloured fish (glanciscus), taken in its juice, and a variety of smelts (smarides), taken with fennel sauce and boiled in milk.—*Med. Times and Gazette, May* 21, 1859, *p.* 520.

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